
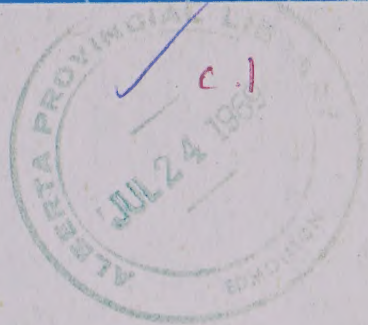


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THE B-15 PLAN

AN OUTLINE FOR RURAL DEVELOPMENT IN ALBERTA'S CENSUS DIVISION 15

Alberta

RESEARCH & PLANNING DIVISION

HUMAN RESOURCES DEVELOPMENT AUTHORITY

GOVERNMENT OF ALBERTA



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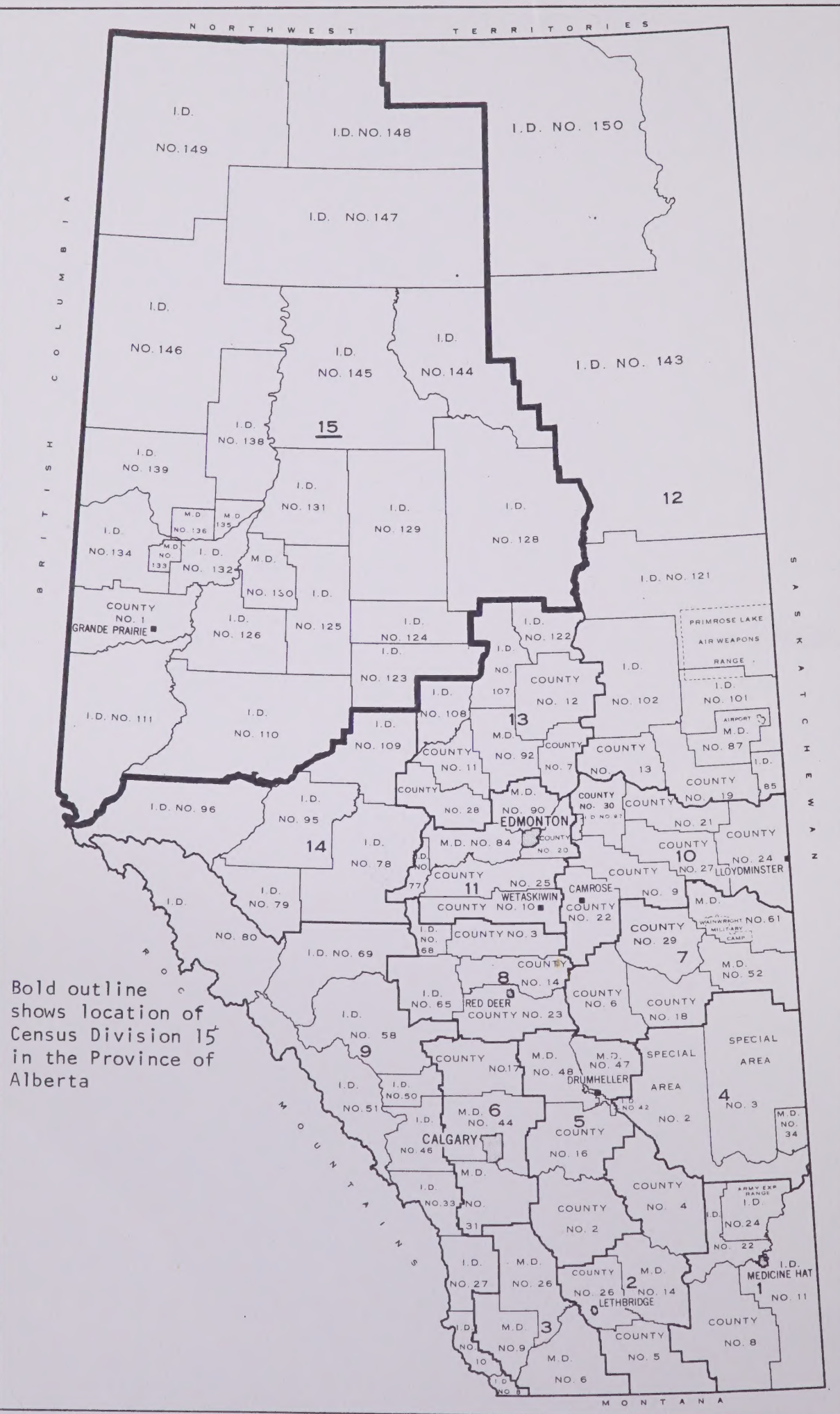
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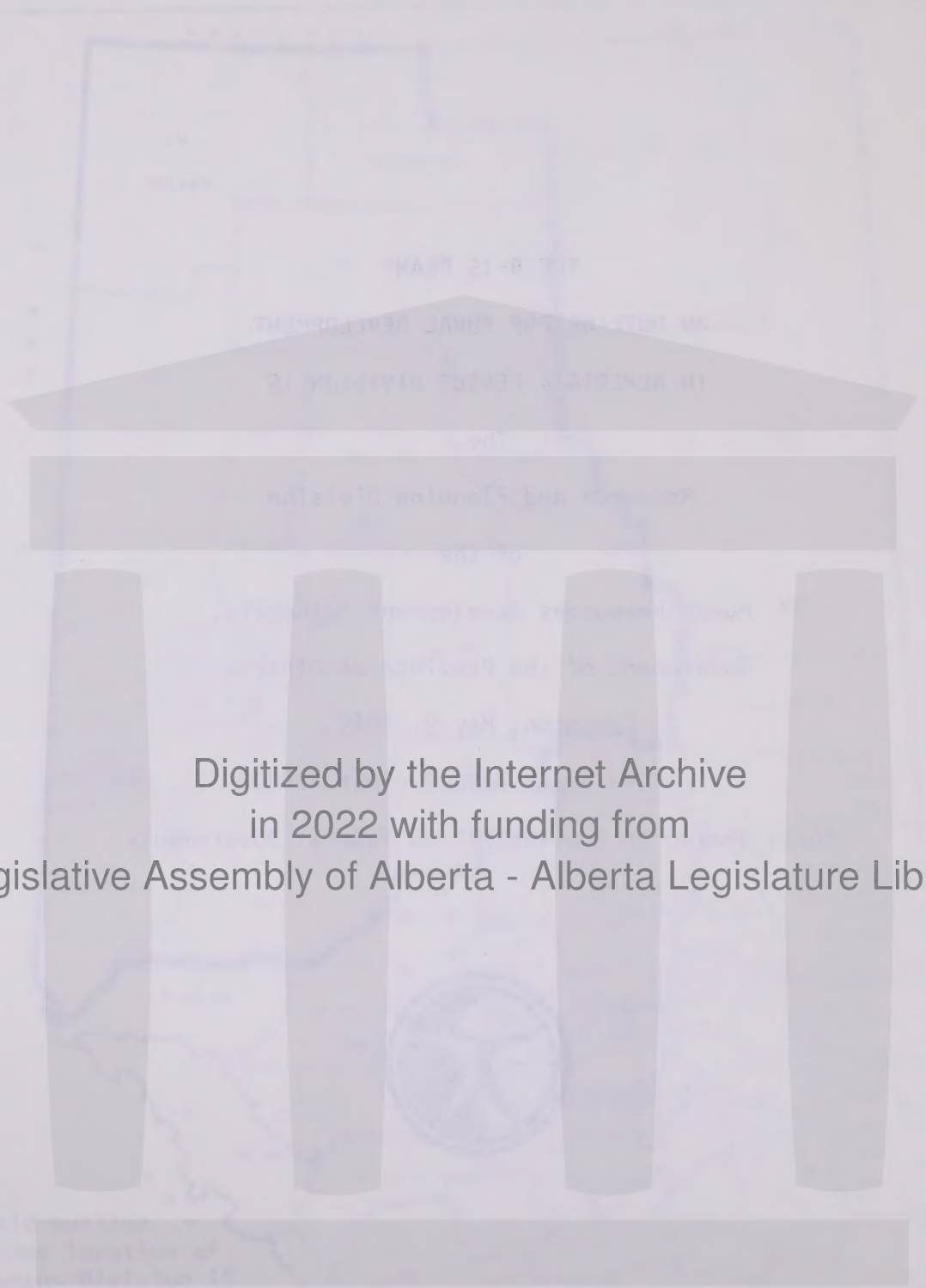
THE B-15 PLAN
AN OUTLINE FOR RURAL DEVELOPMENT
IN ALBERTA'S CENSUS DIVISION 15
The
Research and Planning Division
of the
Human Resources Development Authority,
Government of the Province of Alberta
Edmonton, May 9, 1969
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The Hon. Fred C. Colborne
Chairman



J. E. Oberholtzer
Director



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Research & Planning Division

EDITOR'S PREFACE

Perhaps the greatest attraction for Alberta's early settlers was the idea that, in this province, expanded opportunities abounded. Here, labour and a nominal amount of capital and management could be combined with the abundant physical resources to produce an attractive standard of living; if not for the original settlers themselves, then at least, for their descendants. As the province expanded economically, cultural and social features also developed such as schools, recreational facilities, etc. The cultural and the economic seemed to grow in a direct relationship to one another.

The growth, however, was not a smooth upward progression. Cultural and economic growth progressed in a spasmodic manner through time; in starts and stops. Spatially, as well, a disparity in development became evident. Those areas of this vast province which were settled first and which had easiest access to markets, and transportation facilities, which could bring in labour and technology, developed much more quickly than those relatively isolated areas whose populations had to cope with climatic and geographic problems, as well as the problem of being "late" in getting started.

By the 1960's, the problem of regional disparity became so evident, indeed, so acute, that a conference on Resources for Tomorrow (1961) was held. At this conference, papers presented by many specialists in many fields, pointed out the gap between the potential and the actual accomplishments in underdeveloped areas. The mounting evidence that pointed to increased involvement and commitment of individuals as well

as all levels of government as a necessary prerequisite to development, was documented. It was becoming more evident that if those individuals who lived in underdeveloped areas were to attain a level of socio-economic development which even approximated the levels of the "developed" areas, an accelerated rate of growth had to take place. To facilitate this growth, the senior governments demonstrated their concern by enacting and co-operating in ARDA.

This publication, the B-15 Plan, (an abbreviation for: "Building Census Division 15") is intended to be the first step in facilitating the "accelerated growth" of C.D. 15.^{1/} It is intended to inventory the resources of the area as they exist at the present time, review and analyze the circumstances and make tentative suggestions and projections. It is hoped that the information contained in this volume will provide, at least some, of the factual knowledge for decision-making at the local level by local organizations and individuals. It is also hoped that the volume will be useful to the many governmental agencies, actively involved in stimulating the developmental process in the area, in formulating their policies.

In all cases, the contributors to this volume, have recognized the worth and dignity of the individual and suggested alternatives are just that; final decisions will have to rest with the local people of Census Division 15.

^{1/} Census Division 15 is generally known as the "Peace River Area". Its location in the Province of Alberta is illustrated on the inside of the front cover. A more detailed illustration of C.D. 15 appears on the inside of the back cover.

This volume is dedicated to the courage, resourcefulness of the residents of the Peace River Area who have carved out homes of what was only recently, a wilderness and especially to the native people who were first to recognize that the Peace River Area would provide a livelihood for those who settled there.

L. Sereda

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BASIC CONCEPTS IN DEVELOPMENT

by

Paul J. Steimaschuk

and

Ken A. Svenson

INTRODUCTION

The White Paper on human resources development, published by the Government of Alberta set out as a goal for the government, the development of a society of "free and creative individuals". This same paper spells out the relationships between human and physical resource development and establishes that although people are to be considered intrinsically more important than the physical resources, human resource development cannot take place if there are no physical resources to support this development. Human resource development encompasses a wide range of interrelated activities: the resource base influences the type and size of industry; industry dictates the number of jobs available and the salaries to be paid; salaries influence housing conditions which influence family relationships; family relationships influence learning, which influences abilities to obtain and keep a job; the availability of a skilled labour force also affects the development of resources. These are only a few of the interdependent relationships.

This publication is intended to supply some of the information needed in planning and implementing a program of human resource development in the northwestern part of Alberta. The resources of the area are enumerated; the institutions available for human resource development are discussed and some projections as to the possible future state of the area are included. The core of the analysis is in the manpower requirements which are projected to 1981. These projections, together with the present situation, illustrate the magnitude and type of adjustment required to form economically viable communities.

It is assumed throughout the report that a community that is not economically viable does not have and probably cannot develop "free and creative individuals". This is not to say that if a community is viable

that free and creative individuals are automatically developed. It is assumed, however, that one of the prerequisites for a community of free and creative individuals is economic viability.

A second assumption throughout the report is that development must occur within the framework of individual choice. This, then, restricts the activities of government to the areas of educating, encouraging, and enabling.

The government must also keep in mind that, on occasion, the developments which would benefit some individuals or a particular local community may not benefit other individuals or the total province. For example, a large government-financed land clearing program may be of benefit to a local community by enlarging its economic base but the additional agricultural expansion may harm the agricultural industry in Alberta because the surplus may lead to lower prices. Furthermore, the scheme may not be beneficial to the individual farmer who has already improved all of his land or who may not attain economic viability by going, for example, from 30 to 60 acres of cleared land. The influence of projects must be determined at the individual, local, provincial and even national levels.

The area covered in this report is Census Division 15. This area has as its western boundary the Alberta-British Columbia border, as its northern boundary is the Alberta-Northwest Territories border, its eastern boundary is approximated by the fourth meridian, and the southern boundary is an east-west line south of Valleyview. The area contains approximately 94,000 square miles and had a population in 1966 of 88,344.

This publication is called the B-15 Plan, an abbreviation for "Building Census Division 15". It is intended to convey the ideas of growth, development and adjustment. The volume, however, falls short of being a plan. It contains information necessary to develop a comprehensive plan but it is hoped that local people, local governments, volunteer organizations and many provincial government officials will contribute to the plan, using this

information as a basis.

The volume includes chapters on agriculture, non-agricultural industries, welfare, health, education, municipal finance, Indians and Metis people, and housing. Resources of the area are explored in order to ascertain present problems and possible future developments. The labour force needed to facilitate these developments is projected and using a ratio between those employed in the basic industries and those needed in supporting services the total labour force can be calculated. Data from present population and education statistics can then be used to project the type and the magnitude of the educational program required. The implications of these adjustments can also be projected into the fields of health and welfare. From these projections individuals and groups can develop programs to facilitate the necessary adjustments. The final programs will result from work performed by many people in agencies of government and in local organizations.

Regional Development Concepts

The economy of the Peace River Area^{1/} is highly dynamic; it is also relatively new because settlement of the area began in approximately 1915. In addition, it is a 'mix' of the old approaches and the new look. In a short period of approximately fifty years, there has been a great deal of economic growth in the area. In spite of the large gains made in economic growth, there are areas of economic dislocation and lack of equilibrium. For example, the depletion of certain kinds of fish and forest resources in the Lesser Slave Lake area and the reduction in the number of farms in some of the agricultural areas has produced adjustment problems for the areas concerned.

Underlying the change in rural communities^{2/} is the accelerated application and a new 'mix' of production components which caused a modernization revolution in the basic industries such as agriculture. These components include mechanization (big tractors and combines, unit trains, etc., e.g.); technology (use of fertilizers, complete livestock rations, plastics, buildings, e.g.); and brains replacing brawn (e.g. farm reorganization, planning of all operations, buying expertise, etc.). The new 'mix' of production components has extended greatly, the productive capacity of entrepreneurs who apply the components to their firm. Initially, the mechanization of a farm unit took place when the plow replaced the stick in the tilling of the land. This bit of mechanization released some people from the job of tilling the soil and made it possible for them to produce other goods, thus raising the standard of living for all. The same process (in kind) is still underway in the further modernization of agriculture and other industries.

1/ In this publication the Peace River Area is synonymous with Census Division 15 unless otherwise specified.

2/ Rural communities as discussed here include communities dependent for their economic existence upon development of primary resources such as agriculture, fishing, forestry, mining, etc.

The intensified application of mechanization, technology and management has made it possible for each manager to operate larger units and in the case of agriculture, the process has 'pushed' farmers off the land. In addition, the development of higher paying jobs in urban centers and areas of more intense economic activity, as well as increased amenities and services in urban areas, have attracted farm people away from farming, or have 'pulled' the people off the land. The 'push' and 'pull' factors have combined to cause critical adjustment problems in some of the rural communities.

An important causal factor in the changes in rural communities is the change which has occurred in the field of transportation. Over a period of years more and better roads were provided throughout the Peace River Area and people acquired more cars and trucks. These developments combined to make it possible for rural residents to travel to larger service centers, further down the road. The by-passing of the 'home-town', dried up economic activity there. As a consequence, many of the hamlets and towns are expected to continue to have survival problems. Research has documented that the people, initially restricted by 'horse-and-buggy' travel, were willing to spend about one hour of travel time to commute to a trade center. In addition, their demand for services, social and commercial, were comparatively simple. As a result, the development of hamlets and towns eight to ten miles apart satisfied the needs of the rural residents. Today's rural residents are still willing to allot one hour of travel time to reach a trade center but the distance covered by present means of transportation is approximately 60 miles. This fact combined with the increased demand for social and commercial services is expected to shift the economic activity of rural residents to the larger service centers which are expected to develop about 100 miles apart. It is also likely that some of the hamlets and towns, within commuting distance of the source of jobs, will exist as 'bedroom' communities. That is, the people will continue to sleep in their homes in the hamlets and towns

but will work in urban centers or in the growing service centers with new developing industries.

In considering regional development, it is important that consideration be given to the possibility of attaining economic improvement through the improvement of industries already in the area. This approach is usually within the grasp of local managers since the decisions of the firm are made at home. It should be recognized that economic influences from outside the area may restrict, or enhance, the range of 'home-made' decisions. For example, credit limitations may be imposed by institutions outside the area or the management that makes decisions regarding improvements of industries in C.D. 15 may reside outside the area, thus putting some factors of development beyond the control of local residents and thus restricting 'home-made' decisions. On the other hand if a firm headquartered in Ontario or Japan, etc., decides to build a plant in C.D. 15, it enhances many economic decisions in C.D. 15 because of the injection of added economic activity which make added 'home-made' decisions possible. Thus some things are beyond the control of local decision makers and this fact needs to be recognized when local people become involved in discussions about community development. In the case of farming and many other industrial firms, decisions are made 'at home' and as such decisions related to the economic viability of the firm are within the grasp of local residents. For example, in agriculture, the following opportunities are within the realm of 'home-made' decisions: effective use of farm fertilizers, increased milk production per cow through improved breeding and feeding practices, increased efficiencies in amount of meat produced per beef cow, etc. The same holds true in forest and other industries. In addition, there is a whole array of decisions possible regarding the organization, operation, and management

of a firm. It is essential that local managers in firms of all industries attain a position of economic viability which is competitive with the position of firms in other regions. If this does not happen, the area will lose the industry because it will lose the markets which will be supplied by the more efficient firms located in other areas.

In spite of the current downward adjustment of farm numbers, possible expansion of use of resources in C.D. 15 is high. Development, on a comparatively large scale, is expected in the use of forest, mining, and agricultural resources. Regional economic improvements should be directed at the economic potential of expanded use of available resources.

Another alternative available to stagnating or disadvantaged communities is the possibility of attracting secondary and tertiary industries to locate in the 'home-town'. Although all hamlets and towns can not entice industries, certainly, some can. Some examples of new manufacturing plants started in Alberta in recent years, in towns of 10,000 population and under include:^{1/} potato chip plant, specialized industrial and commercial equipment, unfinished furniture and custom wood products, treated posts, poles, and lumber, steel culverts, trailer manufacturing, caustic soda plant, fertilizer manufacturing plant, lime plant, clay products plant, gas and sulfur processing plant, milk powder plant and creamery, asphalt plant, vegetable processing plant, bulk fertilizer and blending operation, building materials and contracting services, piano assembly firms, farm equipment and implement manufacturing plant, iron and steel foundry, saw mills, mills producing prepared livestock feeds, communications wire and cable operations, concrete products, farm steel building plants and many others. Assuming a level of salaries higher than those received in phased out jobs, the

^{1/} A.B.S.; Summary of General Statistics, Dept. of Industries; Edmonton, 1968.

establishment of such industries would improve the economic position of both the individuals and the community.

Another concept which should be mentioned regarding regional development is that development is the result of decisions made by a large number of private managers. Although some of the managers make mistakes in their decisions, as a whole the system has operated very well in maximizing satisfaction for people. As a result, this publication attempts to provide information for decision-making without suggesting a detailed blueprint, full of preconceived decisions, regarding the development of the area. This process of developing the blueprint is left to the individuals and groups within C.D. 15, who through local involvement, can best determine the details of specific developmental projects and programs which will best meet the interest and desires of local residents and firm managers.

In general, communities which bring into balance the labor requirement with the new market demand for resources will have achieved an improved level of economic equilibrium. In the case of agriculture, if an area continues to produce the same amount of agricultural product sales, or increases the amount as the Peace River Area has done, and the total sales are divided among fewer farmers, then because of reduced farm numbers the remaining farmers are better off and a new equilibrium is in the making. As an alternative, it is possible to devise policies of financial assistance which will inject some money into the firms which lack viability. This would generally delay the adjustment process by making survival of the firm possible as long as the subsidy exists. This alternative has generally militated against modernization of firms which should strive to become economically viable and competitive on a national and/or international basis.

Although it is important to achieve an economically viable and competitive position for each firm in the Peace River Area, this by itself is not enough. It is essential, for example, that people leaving the rural setting be helped with the adjustment to new employment. Those leaving need to be equipped with skills demanded by the modern competitive firms. Hence, training and education are vital components to adjustment and development. The government will need to provide the necessary training and educational facilities and programs since these are beyond the means of the rural communities which need services such as upgrading of basic educational skills, vocational and technical training.

HUMAN RESOURCES IN C. D. 15

By

Ken. A. Svenson

and

Leo Regehr

MANPOWER AND POPULATION ADJUSTMENTS

The reason for the development of resources in a region is to increase social and economic benefits for the people; to improve the general level of culture and material well-being. The majority of the people in a region benefit from resources mainly through the employment which the development of these resources provides. Projections of the labour force demand then, become a most important part of any development program. The projections shown below are derived from projections about possible and probable developments in the basic industries. Employment projections are made by industry sector. The details of these projections are included in the industry sections and only the summary is inserted here. The employment in the tertiary industry sectors was calculated by using a ratio of service to basic industries derived from observations of other areas in Alberta. It was assumed that as C.D. 15 becomes more industrialized and more urbanized, it will become similar to other areas in the province which have reached the projected stage of urbanization. It was also assumed that the type and mix of services would become similar to these other areas.

The projections are made on the basis of industry sector and not on the basis of occupation or skill. If educational programs are to be designed so that the people of C.D. 15 can take advantage of the anticipated changes in employment demand then additional research is needed to determine the type of occupations which will be in demand.

As shown in Table 1, employment in C.D. 15 is expanding and is projected to continue expansion until 1981. The demand for labour is expected to increase from 25,050 in 1961 to 37,377 in 1981. This total hides some of the problems which will be evident in this expansion. If the labour force is examined by industry sector it is evident that the number of people engaged in agriculture and fishing and trapping will decrease while the number in most other industries will rise. These changes will necessitate

Table 1

EMPLOYMENT BY INDUSTRY

C.D. 15

1961 & PROJECTION 1981

	Employment 1961		1966 M.Y.E.*	Projected Employment 1981 - M.Y.E.	
	#	%		#	%
Agriculture	10,325	41.1	9,900	9,000	24.1
Forestry	890	3.6	655	1,330	3.6
Fishing & Trapping	485	1.9	240	315	0.8
Mining	594	2.4	1,283	2,095	5.6
Manufacturing	950	3.8	1,156	2,500	6.7
Construction	1,352	5.4	2,500	3,000	8.0
Transportation, Comm- unication & Utilities	2,345	9.4	-	3,738	10.0
Trade	2,721	10.9	-	4,859	13.0
Finance, etc.	331	1.3	-	748	-
Business, etc.	3,698	14.7	-	7,139	19.1
Public Administration	726	2.9	-	1,905	5.1
Other	643	2.6	-	748	2.0
TOTAL	25,050	100.0		37,377	100.0

* Man-year equivalents: Based on the assumption that 250 working days or 2,000 hours per annum is equivalent to a full year's employment.

adjustments on the part of individuals in the labour force. The industry changes in labour force also hide some major adjustments which will occur within each industry. For example, the projected employment of 9,000 in agriculture will not all be jobs on farms. There will be proportionately more people working in the field of agriculture but not on farms in 1981 than in 1961. This necessitates a change of skills. Those who do work on farms will need adjustments in skills and agricultural practices in order to meet the requirements of farming in 1981. Each of the other industries mentioned will have internal adjustments of a similar nature. In spite of the expansion in demand for labour there will be problems arising in employment.

The native population of C.D. 15 is under-represented in the labour force statistics. Many of them do not hold steady jobs and may not have been working or looking for work when the census was taken in 1961. These people often do not have the skills necessary to obtain and keep a job and are left behind when new job openings occur. Programs must be developed so that natives can be involved in and benefit from the projected expansion in employment. In spite of projected increase in demand for labour, there must be some major readjustments in the region in order for the people of the region to achieve maximum benefits from the expansion.

The increased labour force will support an increase in the total population. In C.D. 15 in 1961 there were 3.07 people in the total population for every person in the labour force. The comparable Alberta ratio was 2.71:1. These ratios are comparing total population to total labour force but the projected labour force in 1981 is in man-year-equivalents. Table 2 shows the calculated man-year equivalents for wage earners in C.D. 15 and Table 3 shows similar calculations for Alberta. Table 4 shows the calculation made to obtain an estimate of the man-year equivalents for the

Table 2 MAN-YEAR EQUIVALENTS FOR WAGE EARNERS

		C.D. 15			
		1961			
Weeks Worked	Total	1-13 wks.	14-26 wks.	27-39 wks.	40-50 wks.
Total Wage Earners (Reporting Weeks Worked)	11,794	1,285	1,405	1,485	7,619
* Total Wage Earners (Adjusted for wks. worked)	13,340	1,453	1,589	1,690	8,618
** Man-Year Equivalents	11,035	363	794	1,260	8,618

Table 3 MAN-YEAR EQUIVALENTS FOR WAGE EARNERS

		ALBERTA			
		1961			
Weeks Worked	Total	1-13 wks.	14-26 wks.	27-39 wks.	40-50 wks.
Total Wage Earners	334,170	24,733	25,353	28,809	255,275
* Total Wage Earners (Adjusted for Weeks Worked)	362,794	26,851	27,525	31,275	277,143
** Man-Year Equivalents	321,074	6,712	13,762	23,457	277,143

* It was assumed that those not reporting weeks worked were distributed on the same basis as those who reported weeks worked.

** The man year equivalents were calculated assuming that each person in a given category worked for the length of time designated as the upper limit of that category. This would tend to overestimate the number of man year equivalents.

total labour force for Alberta and C.D. 15. As shown in this table there were 3.38 and 2.97 people in the total population for every man-year equivalent in the labour force for C.D. 15 and Alberta respectively. This is probably an underestimate because of the way in which the man-year equivalents were calculated. If it is assumed that by 1981 there will be 3.4 people in the total population for every man-year equivalent in the labour force then the total population would be estimated at 127,082 and if the population per man-year equivalent were to be 3.5 the total population would be 130,820.

Population projections made on the basis of 1961-1966 trends indicate that if population growths were to continue at the 1961-1966 rate that the total population of C.D. 15 would be 134,324 by 1981. This is almost 4,000 people more than the highest projection based upon labour force demand. However the 1961-1966 period was a period of net in-migration for the area. If the population were projected on the basis of natural increase only (births minus deaths) and the migration factor was estimated then the 1981 population would be 130,541. (See Table 5 .) This is almost identical to the projection made on the basis of labour force demand, indicating that if the rate of natural increase remains constant to 1981, most of the demand for labour could be supplied from within the region, assuming that the proper mix of skills were available. However, the rate of natural increase has been declining in the rest of Canada and will probably decline in C.D. 15 also. Although C.D. 15 will probably continue to be an area of net in-migration, the required mix of skills will not be available from within the area even if an intensive training program is undertaken so that accelerated mobility will be necessary which is not now apparent in net migration statistics.

Table 4 POPULATION PER MAN-YEAR EQUIVALENT

C.D. 15 and ALBERTA

1961		
Item	C.D. 15	Alberta
1. Man Year Equivalents for Wage Earners	11,035	321,074
2. Total Wage Earners	13,340	362,794
3. Total Labour Force	25,050	489,511
4. Labour Force Minus Wage Earners (Item 3 minus Item 2)	11,710	126,717
5. Total Man-Year Equivalents (Item 1 plus Item 4)*	22,745	447,791
6. Total Population	76,884	1,331,944
7. Population per M.Y.E.	3.38	2.97

* It is assumed that all those people in the labour force but not wage earners were fully employed. This is false from observation so the numbers shown in Item 5 are overestimates.

Table 5

POPULATION PROJECTIONS BASED ON
1961-66 RATE OF NATURAL INCREASE
C.D. 15

1961 Population	76,884
Natural Increase	10,660
% Natural Increase	13.9 in five years
1966 Population	88,344
1971 Calculated Population	100,624
1976 Calculated Population	114,610
1981 Calculated Population	130,541

EDUCATION IN C. D. 15

Highlights

Recent statistical information indicates that a society's investment in education nets larger returns than those enjoyed by private business. Carefully-planned programs and well-utilized educational facilities are, therefore, just good business.

Although enrolments in C. D. 15 are increasing, the increase is at a slower rate than the provincial average. A higher percentage of C. D. 15 students discontinue their formal education after leaving school than elsewhere in Alberta. In addition, C. D. 15 students are attaining lower grade levels than the provincial average.

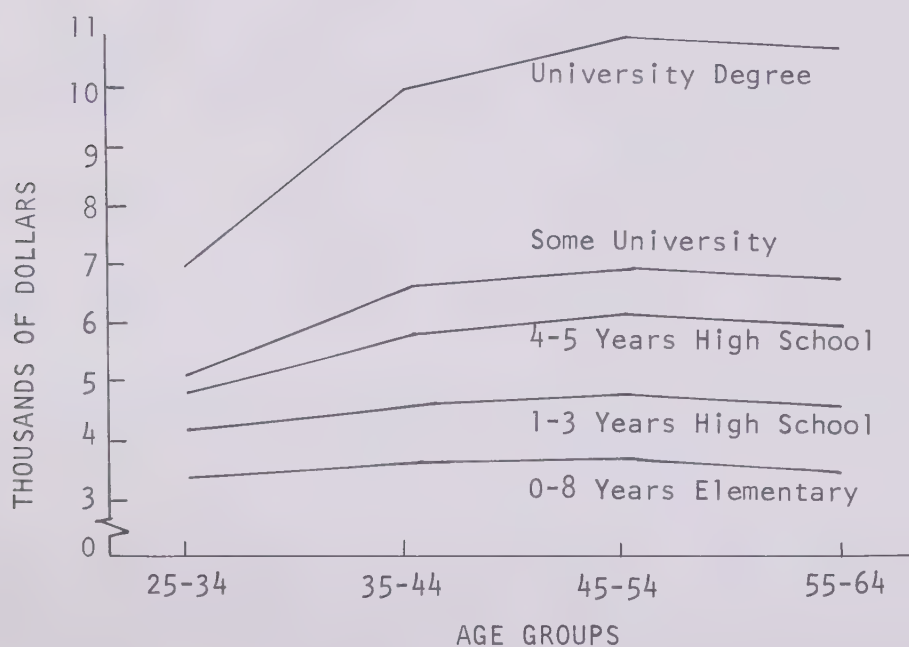
Taxes for education are a greater burden to the C. D. 15 taxpayer than elsewhere in the province. There are several reasons for the high taxes for education in C. D. 15:

1. C. D. 15 schools serve a vast geographic area with a sparse population resulting in unusual operating expenses.
2. In some areas, where schools are in near proximity, they are duplicating services by offering the same academic programs, consequently, the facilities are under-utilized.
3. Some rural school districts are receiving decreasing amounts of provincial 'per-pupil grants' as their population begins to migrate to larger centres.
4. Taxable property values are lower in C. D. 15 than in similar areas in the province, consequently, higher mill rates are required to provide for supplementary requisitions. However, in spite of the higher mill rates for supplementary requisitions, C. D. 15 spends less on education per pupil than other areas in the province.

Introduction^{1/}

Education has traditionally been viewed as having personal, economic and social value but it is only recently that statistics have become available so that some measurement of its economic value has become possible. The statistics enable measurements to be made on the basis of increased incomes and increased productivity. The more education a person receives, the greater his income. This relationship is illustrated in Figure 1.

Figure 1 INCOMES BY AGE GROUP AND EDUCATION LEVEL
MALE NON-FARM LABOR FORCE, 1961 ^{2/}



The Economic Council of Canada estimates that for every dollar a student spends on his education, he receives about 17½¢ per year, or 17½% annual return on his original investment including foregone income.^{3/}

The person with more education receives a higher income because the

1/ Adapted from "Education in the Lesser Slave Lake Area" by Ken A. Svenson; An Analysis of Resources in Alberta's Lesser Slave Lake Area, Rural Development Research Branch, Economics Division, Alberta Department of Agriculture, Edmonton, 1968.

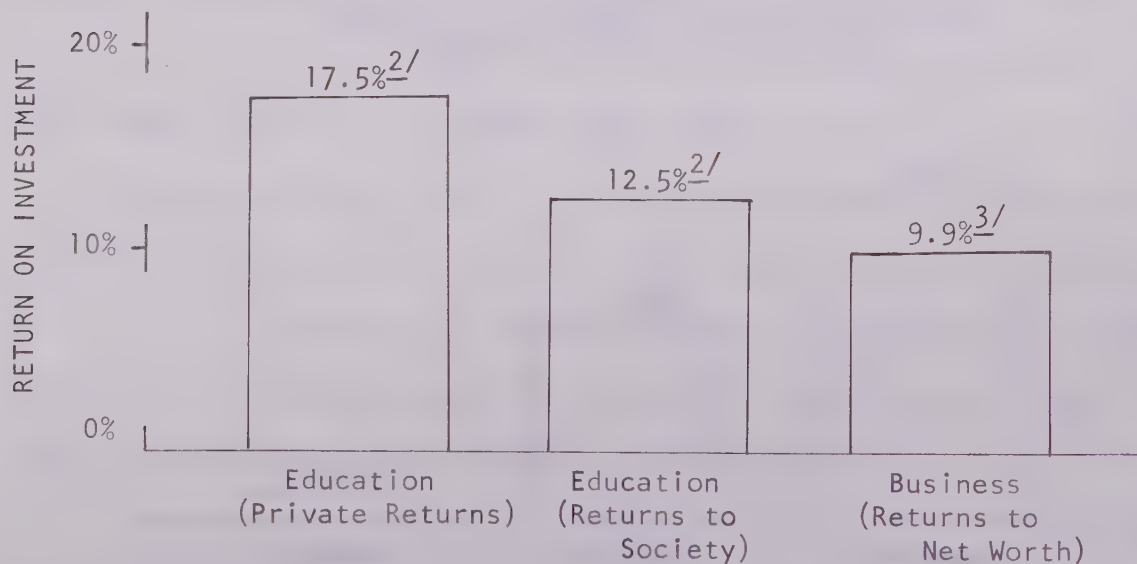
2/ Economic Council of Canada Second Annual Review, 1965, Queen's Printer, Ottawa, 1966 p. 87.

3/ Ibid, p. 90.

education enables him to produce more of that which is valued by society than a person with less education. Because of his greater productivity, society can afford to pay him a higher salary. Industry today needs highly qualified management and production workers in order to expand productivity which brings increased wages, salaries, and profits and also an increase in the amount of taxes paid. It has been estimated that society itself receives about 12 1/2% per year on its total expenditures on education.^{1/} This return does not come to the local community but comes to society in general.

Since the average return in 1965 on shareholders' business investments was about 10%, it is evident that public expenditure on education is comparatively sound. This is illustrated in Figure 2;

Figure 2 EDUCATION AND BUSINESS INVESTMENTS COMPARED-1965



^{1/} Economic Council of Canada, Second Annual Review, 1965, Queen's Printer, Ottawa, 1966 p. 91.

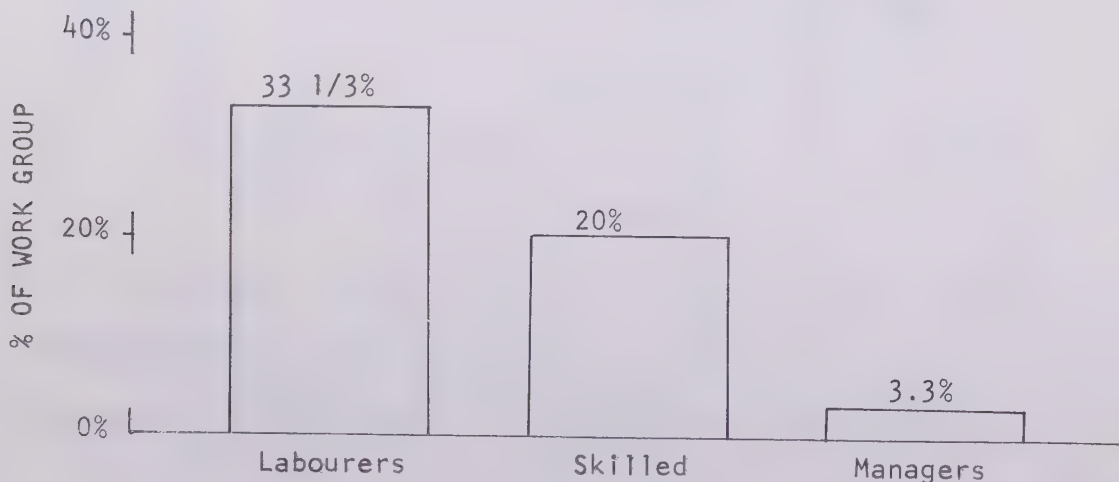
^{2/} Economic Council of Canada, op. cit. pp. 90-91.

^{3/} 'Return on Net Worth Still Rising', The Financial Post, Toronto, May 14, 1966, p. 32.

The profitability comparison does not imply that the local community receives 12½% on its original investment in education because many young people who are educated in one community move to another to work, to live, and to pay taxes. Areas which have a high rate of out-migration of young people may not receive this return and may even lose money on the investment while other areas may receive extra benefits. The profitability comparisons are returns to the whole society.

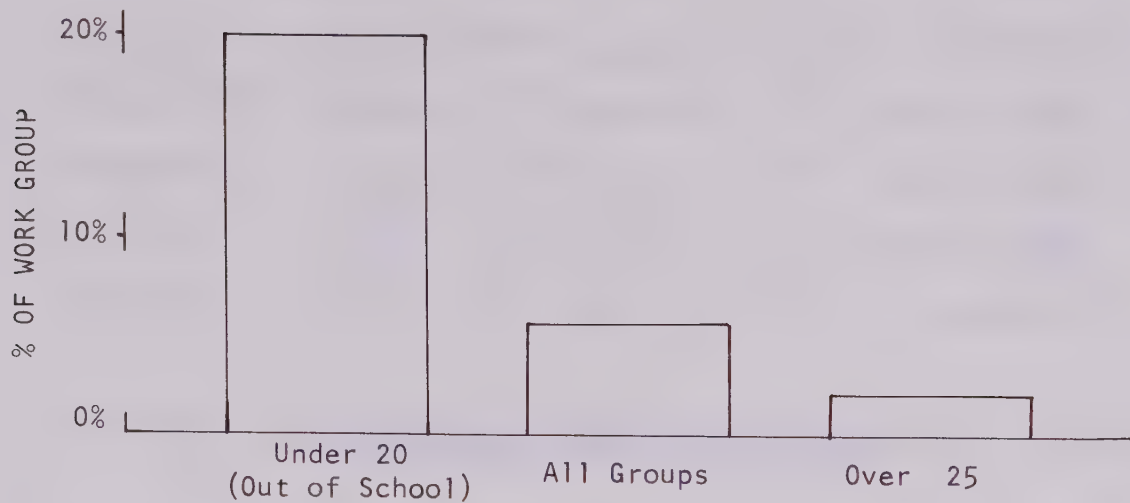
The practical value of education is further documented by the fact that unskilled workers are out of work more often than are skilled workers and that young, inexperienced workers are more often unemployed than are older more experienced workers. These relationships are illustrated in Figure and Figure 3: It is evident that young, inexperienced workers with little education will be unemployed much more frequently than older, experienced and better educated workers.

Figure 3 PER CENT OF WORKERS UNEMPLOYED IN CANADA^{1/}
ONCE OR MORE IN THE YEAR 1964



^{1/} Ostry, Sylvia, "Statistical Study Underlines Unsure Position of Unskilled" in the Financial Times of Canada, Vol. 56 No. 52, Montreal, May 13, 1968, p. 5. (Abstract from monograph in labour force study series, Catalogue No. CS-99-522-A68) Queen's Printer, Ottawa.

Figure 4 TIME LOST THROUGH UNEMPLOYMENT IN CANADA-1964^{1/}
(AS A % OF ALL TIME AVAILABLE)



Enrollment and Teaching Force

Enrollment in C. D. 15 increased more rapidly and the teaching force grew less rapidly than in Alberta generally in the five years, 1961-1966. (See Tables 6 and 7 .) However, the overall pupil/teacher ratio in C. D. 15 is presently close to the provincial average of 21.4 pupils per teacher. (See Table 8 .) Enrollments appear to be still on the increase but the recent trend shows a marked deceleration. (See Table 12.)

Elementary schools within C. D. 15 presently enroll more pupils than do the high schools and they also have higher pupil to teacher ratios. (See Tables 9, 12, 13.) High pupil to teacher ratios in the elementary grades might be the result of a strong demand for teachers to staff the many small high schools which are scattered through the area. (See Figure 5 .)

^{1/} Ostry, op. cit., p. 5.

Table 6 TOTAL STUDENT ENROLMENT COMPARISONS^{1/}
1961 & 1966

Calculated On	<u>Alberta</u>	<u>C. D. 15</u>	<u>C. D. 12</u>
June 30, 1966	368,136	23,493	12,027
June 30, 1961	294,435	17,812	10,512
Total Increase	<u>73,701</u>	<u>5,681</u>	<u>1,515</u>
% Increase	25%	32%	14%

Table 7 TOTAL TEACHING FORCE COMPARISONS

	<u>Alberta</u>	<u>C. D. 15</u>	<u>C. D. 12</u>
June 1966	17,183	1,106	605
June 1961	12,607	827	485
Total Increase	<u>4,576</u>	<u>279</u>	<u>120</u>
% Increase	36%	34%	25%

Table 8 TOTAL PUPIL-TEACHER RATIOS
1961 & 1966

	<u>Alberta</u>	<u>C. D. 15</u>	<u>C. D. 12</u>
June 1966	21.4	21.2	19.9
June 1961	<u>23.3</u>	<u>21.5</u>	<u>21.7</u>
Decrease (61-66)	-1.9	-.3	-1.8

^{1/} Alberta Department of Education; Fifty-Sixth Annual Report, 1961,
Edmonton, 1962. p. 203,

and

Alberta Department of Education, Sixty-First Annual Report, 1966,
Queen's Printer, Edmonton, 1967. p. 197

and

Northland School Division, Superintendent's Annual Report following
auditors Financial Statement, 1965.

Table 9 ENROLMENTS IN ELEMENTARY AND HIGH SCHOOLS IN SEPTEMBER, 1966
BY % OF TOTAL ENROLMENT ^{1/}

	<u>Alberta</u>	<u>C. D. 15</u>	<u>C. D. 12</u>
High Schools	18%	13%	14%
Elementary	82%	87%	86%
Total (%)	<u>100%</u>	<u>100%</u>	<u>100%</u>
Total Nos.	368,136	23,493	12,027

Table 10 ESTIMATED TEACHING FORCE IN ELEMENTARY AND HIGH SCHOOLS IN 1966
BY % OF TOTAL TEACHING FORCE

	<u>Alberta</u>	<u>C. D. 15</u>	<u>C. D. 12</u>
High Schools	23%	22%	22%
Elementary	77%	78%	78%
Total (%)	<u>100%</u>	<u>100%</u>	<u>100%</u>
Total nos.	17,183	1,106	605

Table 11 ESTIMATED PUPIL-TEACHER RATIOS IN ELEMENTARY AND HIGH SCHOOLS IN 1966 ^{2/}

	<u>Alberta</u>	<u>C. D. 15</u>	<u>C. D. 12</u>
High Schools	16.6	13.0	12.9
Elementary	22.9	23.6	21.8
Total	<u>21.4</u>	<u>21.2</u>	<u>19.9</u>

^{1/} Alberta Department of Education, Edmonton, unpublished data on Form T302-320 Section 'C' 965-66 for all schools in C. D. 15.
and

Alberta Department of Education; Sixty-First Annual Report, 1966, Queen's Printer, Edmonton, 1967. p. 197.

^{2/} Downey, L. W.; The Small High School in Alberta, The Alberta Trustees Association, Edmonton, 1965. p.p. 19, 23, 25.

All grades in C. D. 15 have higher drop-out rates than similar grades throughout Alberta. (See Table 12.) Higher drop-out rates are especially marked in the Fort Vermilion area and in schools of the Northland School Division. However, in the school divisions of Spirit River and High Prairie, drop-out rates are generally lower than they are throughout the province. (See Table 12.)

Many teachers prefer to teach in larger centres and cities and better qualified teachers tend to compete more successfully for city positions. These conclusions are inferred from the fact that 26% of the teachers in C. D. 15 resigned in 1966^{1/}, compared with 25% throughout the province^{2/} and only 22% of C. D. 15 teachers held university degrees compared with about 42% throughout Alberta^{3/}. Table 14 below, further illustrates the teachers' preference for larger centres.

Local School Taxes

The value of revenue-producing property in C. D. 15 is half of what it is throughout Alberta. In terms of equalized assessments,^{4/} the value of property per enrolled pupils was \$3,500 in 1967, whereas, \$6,550 was the average value throughout Alberta. (See Table 13.) This explains why supplementary mill rates are 5 mills higher in C. D. 15 than they are throughout Alberta. If C. D. 15 raised its supplementary requisitions per pupil to the provincial

1/ Secretary Treasurer's Supplement to the Auditor's Financial Statement, 1965, p. 11 for all schools in C. D. 15.

2/ Wicks, J. E. and Rieger, T. F.; The Alberta Teaching Force, September, 1966 Research Monograph No. 12, The Alberta Trustees Association, Edmonton, 1967. p. 12

3/ Ibid

4/ This term includes the value of government property for which a municipality gets grants in lieu of taxes.

Table 12

AVERAGE ENROLMENTS (SEPT. 1966, 67)^{1/}
AND NO. LEAVING SCHOOL JAN. 1 - DEC. 31, 1967

County Divisions & Consolidated Districts by No.		Grades I - VI			Grade VII			Grade VIII			Grade IX		
		Average Enrolled	No. Leaving School 1967 No.	%	Average Enrolled	No. Leaving School 1967 No.	%	Average Enrolled	No. Leaving School 1967 No.	%	Average Enrolled	No. Leaving School 1967 No.	%
Grande Prairie County	1	1,563	-	-	262	1	-	258	5	2	235	6	3
Peace River Division	10	1,864	3	-	279	5	2	228	11	5	217	11	5
Spirit River	47	1,214	2	-	199	1	-	176	1	1	156	5	3
High Prairie	48	2,116	2	-	289	2	1	266	3	1	248	18	7
Fairview	50	879	-	-	125	3	2	120	3	2	123	7	6
Fort Vermilion	52	949	30	3	116	12	10	91	16	18	60	12	20
East Smoky	54	922	-	-	112	-	-	104	1	1	102	2	2
Northland Division (part)	61	1,164	13	1	151	12	8	95	12	13	234	68	29
Falher Consolidated	69	458	1	-	34	-	-	39	-	-	51	2	4

Districts by Location and No.

Fort Vermilion (Cath. Sep.)	26	166	1	1	14	5	36	12	4	33	9	-	-
Grande Prairie " "	28	482	-	-	65	2	3	53	1	2	50	-	-
McLennon " "	30	177	-	-	34	1	3	30	4	13	28	7	25
Fairview " "	35	216	2	1	35	1	3	30	4	13	21	2	9
Spirit River " "	36	79	-	-	12	-	-	10	-	-	11	1	9
Manning " "	37	128	-	-	20	1	5	21	-	-	18	-	-
Peace River " "	43	235	-	-	29	2	7	34	-	-	24	3	12
Sexmith " "	51	79	1	1	12	-	-	9	-	-	9	-	-
High Prairie " "	56	275	-	-	41	-	-	31	-	-	26	-	-
Beaverlodge " "	68	89	-	-	12	-	-	30	-	-	7	-	-
Valleyview	84	259	-	-	36	1	3	44	-	-	21	1	5
Grimshaw (Cath. Sep.)	88	163	-	-	20	-	-	10	-	-	7	-	-
Nampa	96	55	-	-	11	-	-	7	-	-	9	-	-
Grande Prairie (Cath. Sep.)	2357	1,872	-	-	225	1	-	209	4	2	151	5	3
Grovedale	4910	81	-	-	9	1	11	8	-	-	-	-	-
St. Isadore	5054	28	-	-	7	-	-	4	-	-	4	1	25
Swan Hills	5109	288	-	-	26	1	4	22	1	5	18	1	6
C. D. 15 - All Schools		15,012	55	0.4	2,169	52	2	1,889	70	4	1,834	152	8
Alberta - All Schools		215,248	151	0.1	33,647	239	1	31,178	507	2	29,336	1,198	4

County, Divisions & Consolidated Districts by No.		Grade X			Grade XI			Grade XII			All Grades			Enrolment Increase or (Decrease) Sept. 66, 67
		Average Enrolled	Leaving School No.	%	Average Enrolled	Left School No.	%	Average Enrolled	Left School No.	%	Average Enrolled	Left School No.	%	
Grande Prairie County	1	189	19	10	139	21	15	149	72	48	2,793	124	4	17 0.6
Peace River Division	10	218	20	9	170	33	19	137	78	57	3,061	161	5	102 3.3
Spirit River	47	140	9	6	99	9	9	79	39	49	2,063	66	3	13 0.6
High Prairie	48	198	11	6	129	17	13	106	57	54	3,350	110	3	(85) 2.5
Fairview	50	106	6	6	85	7	8	120	50	42	1,553	76	5	(15) 1.0
Fort Vermilion	52	36	14	39	23	8	35	4	-	-	1,277	92	7	251 21.8
East Smoky	54	73	8	11	55	2	4	43	25	58	1,407	38	3	116 8.6
Northland Division (part)	61	72	18	25	47	11	23	49	11	22	1,791	145	8	59 3.3
Falher Consolidated	69	40	1	2	41	3	7	25	9	36	458	16	3	68 16.0

Districts by Location and No.

Fort Vermilion (Cath. Sep.)	26	8	1	12	-	-	-	-	-	-	205	11	5	24 11.1
Grande Prairie " "	28	39	1	3	36	2	6	46	20	43	759	26	3	56 7.6
McLennon " "	30	16	1	6	17	2	12	16	5	31	293	20	7	(48) 15.1
Fairview " "	35	22	3	14	17	3	18	19	10	52	360	25	7	21 6.0
Spirit River " "	36	4	3	75	-	-	-	-	-	-	109	4	4	(31) 25.0
Manning " "	37	-	-	-	-	-	-	-	-	-	186	1	-	(5) 2.6
Peace River " "	43	21	-	-	15	1	7	12	-	-	370	6	2	(1) 0.3
Sexmith " "	51	-	-	-	-	-	-	-	-	-	109	2	2	(9) 8.0
High Prairie " "	56	16	-	-	7	-	-	12	-	-	390	-	-	18 4.7
Beaverlodge " "	68	-	-	-	-	-	-	-	-	-	116	-	-	1 0.9
Valleyview	84	13	2	15	9	1	11	7	2	29	369	7	2	19 5.3
Grimshaw (Cath. Sep.)	88	8	4	50	8	-	-	-	-	-	212	4	2	32 16.3
Nampa	96	-	-	-	-	-	-	-	-	-	81	-	-	10 13.1
Grande Prairie (Cath. Sep.)	2357	182	13	7	215	44	20	143	75	52	2547	142	6	81 3.2
Grovedale	4910	-	-	-	-	-	-	-	-	-	93	1	1	6 6.7
St. Isadore	5054	4	1	25	-	-	-	-	-	-	43	1	2	(5) 11.1
Swan Hills	5109	14	1	7	8	-	-	5	-	-	324	4	1	(18) 5.4
C. D. 15 - All Schools		1392	135	10	1097	164	15	982	453	46	24369	1083	4.4	607 2.5
Alberta - All Schools		25909	1862	7	21888	2344	11	21227	8813	41	379433	15114	4.0	20970 5.5

^{1/} Alberta Department of Education, Edmonton. Unpublished data on Form 1302-320 Section 'C' 1966-67 for all schools in C.D. 15 and

^{2/} Alberta Department of Education, Edmonton. Unpublished data on Post School Record Forms No. 1302-300 for all schools in C.D. 15 in 1967.

County, Divisions & Consolidated Districts by No.		Equalized Assessment Per Pupil \$	Supplementary Requisitions Per Pupil \$	Supplementary Mill Rates	Operating Expenditures Per Pupil \$
Grande Prairie County	1	4,200	75	18	714
Peace River Division	10	4,600	76	17	645
Spirit River	47	4,400	58	13	641
High Prairie	48	3,200	32	10	591
Fairview	50	6,100	76	12	602
Fort Vermilion	52	900	16	17	718
East Smoky	54	2,600	51	20	728
Northland Division (part)	61	280	4	15	823
Falher Consolidated	69	3,350	-	-	409
Districts by Location and No.					
Fort Vermilion (Cath. Sep.)	26	400	58	17	446
Grande Prairie "	28	3,200	38	12	624
McLennan "	30	2,300	8	4	1,147
Fairview "	35	2,200	19	9	405
Spirit River "	36	2,600	32	12	516
Manning "	37	2,300	37	16	545
Peace River "	43	3,200	54	17	539
Sexmith "	51	1,600	26	16	519
High Prairie "	56	2,500	25	10	359
Beaverlodge "	68	1,300	21	16	552
Valleyview	84	1,000	19	18	766
Grimshaw "	88	2,100	31	14	588
Nampa	96	1,800	29	16	430
Grande Prairie (Cath. Sep.)	2357	5,700	67	12	192
Grovedale	4910	800	13	17	844
St. Isadore	5054	1,200	17	14	900
Swan Hills	5109	3,500	60	17	654
C. D. 15 - All Schools		3,500	48	13.7	598
Alberta - All Schools		6,550	58	98.9	579

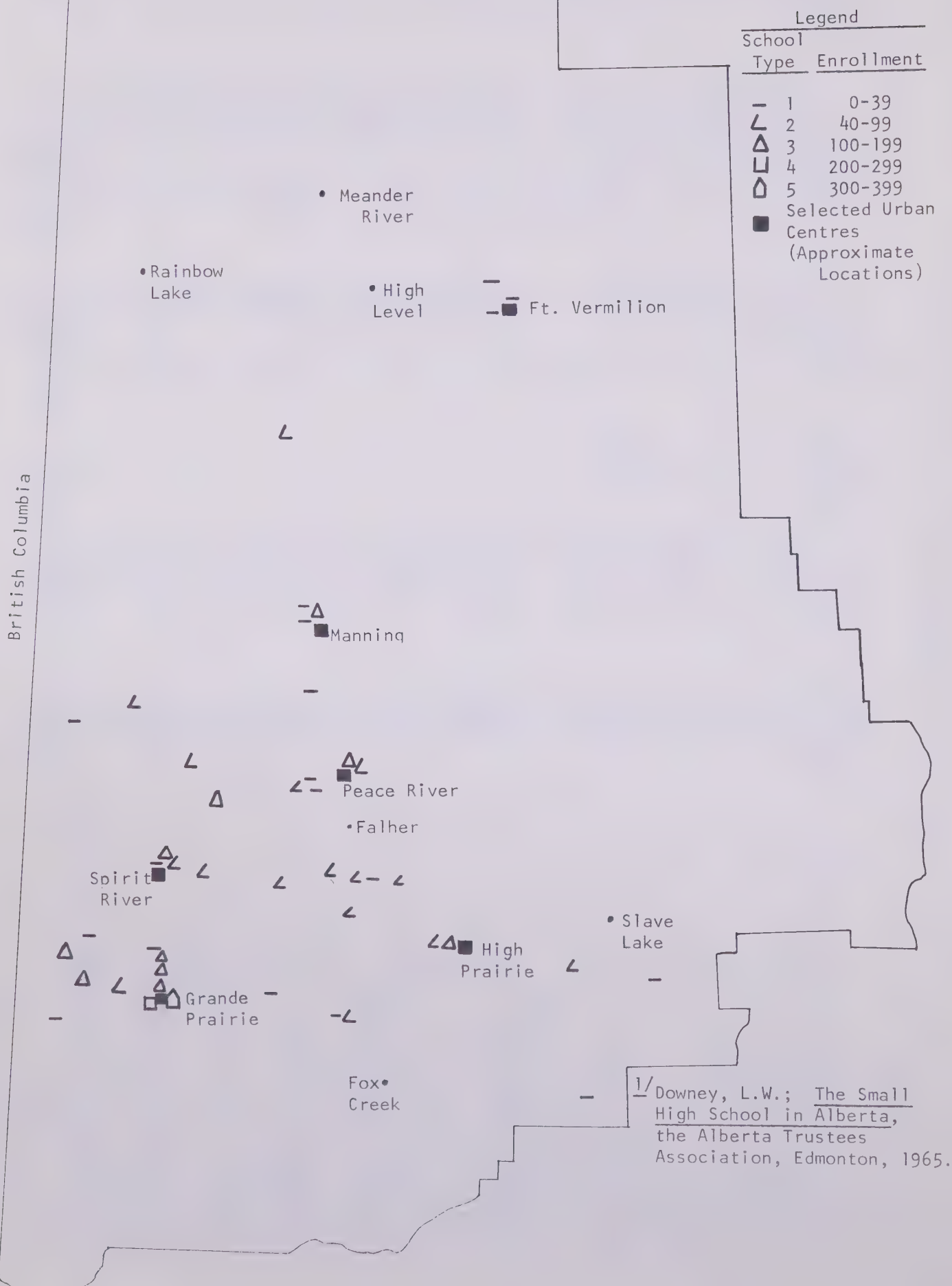
^{1/} School Grants Branch, Alberta Department of Education, Edmonton, 1968. (unpublished data)
and
^{2/} Division of School Administration, Alberta Department of Education, Edmonton, 1968. (unpublished data)

Table 14

SELECTED FINANCIAL INFORMATION FOR SCHOOL AREAS IN 1967-1/
Alberta, C. D. 15

County, Divisions & Consolidated Districts by No.		Enrolment Sept. 30/67	Equalized Assessment	Special Assistance Grants	Supplementary Requisitions	Operating Expenditures	Transportation & Maintenance Grants
Grande Prairie County	1	2,801	11,888,000	-	209,000	1,999,000	278,000
Peace River Division	10	3,162	14,510,000	-	240,000	2,038,000	269,000
Spirit River	47	2,069	9,169,000	-	120,000	1,327,000	203,000
High Prairie	48	3,307	10,716,000	-	107,000	1,954,000	260,000
Fairview	50	1,546	9,393,000	-	117,000	931,000	163,000
Fort Vermilion	52	1,402	1,281,000	186,000	22,000	1,006,000	112,000
East Smoky	54	1,465	3,766,000	75,000	75,000	1,066,000	158,000
Northland Division (part)	61	1,831	513,000	365,000*	8,000	1,506,000*	103,000*
Falher Consolidated	69	492	1,649,000	-	-	201,000	269,000
<u>Districts by Location and No.</u>							
Fort Vermilion (Cath. Sep.)	26	193	86,000	-	1,000	86,000	-
Grande Prairie "	28	797	2,540,000	-	30,000	497,000	10,000
McLennan "	30	269	611,000	-	2,000	133,000	7,000
Fairview "	35	370	798,000	-	7,000	150,000	-
Spirit River "	36	93	240,000	-	3,000	48,000	1,000
Manning "	37	184	417,000	-	7,000	100,000	-
Peace River "	43	369	1,195,000	-	20,000	199,000	3,000
Sexmith "	51	104	170,000	-	3,000	54,000	-
High Prairie "	56	398	1,010,000	-	10,000	143,000	-
Beaverlodge "	68	116	155,000	-	2,000	64,000	1,000
Valleyview	84	1,269	269,000	-	5,000	206,000	-
Grimshaw (Cath. Sep.)	88	228	480,000	-	7,000	134,000	3,000
Nampa	96	86	151,000	-	2,000	37,000	1,000
Grande Prairie (Cath. Sep.)	2357	2,587	14,703,000	-	174,000	497,000	4,000
Grovedale	4910	96	72,000	-	1,000	81,000	10,000
St. Isadore	5054	40	47,000	-	1,000	36,000	7,000
Swan Hills	5109	315	1,111,000	15,000	19,000	206,000	-
C. D. 15 - All Schools		24,589	86,940,000	641,000	1,192,000	14,699,000	1,862,000
Alberta - All Schools		385,972	2,528,940,000	641,000	22,401,000	223,551,000	15,795,000

Figure 5 LOCATION OF SCHOOLS BY CATEGORY, C.D. 15, 1965 ^{1/}



average, its supplementary mill rate would be about 8 mills above the provincial average. (See Tables 13 and 14.)

Table 15 DISTRIBUTION OF TEACHERS IN ALBERTA 1966-67
BY QUALIFICATION AND LOCATION 1/

	<u>Less Than 30,000 Population</u>	<u>Population Of 30,000 or Greater</u>	<u>Total</u>
Less Than 4 Years Training	63%	37%	100%
4 Years Training Or More	40%	60%	100%

Mill rates for separate and public school districts are much the same. Separate school districts are obliged to set their mill rates as near as possible to that of the public district's rates to discourage transfer of students to the latter.

School Facilities

School facilities are scattered throughout C. D. 15 and sometimes facilities are duplicated within a relatively small area. In many places high schools could be consolidated, programs enlarged and facilities improved. Dr. Downey has classified high schools in Alberta according to size and scope of program.^{2/} The following table (Table 16) lists the categories and the number of schools in C. D. 15 in that category. Figure 5 shows the approximate location of the schools by category.

1/ Wicks, J.E. and Rieger T.F. op.cit. p. 12.

2/ Downey, L. W.; op. cit.

Table 16 NUMBER OF HIGH SCHOOLS IN C. D. 15 BY TYPE^{1/}

<u>Type</u>	<u>Enrolment</u>	<u>Program Characteristics</u>	<u># of Schools</u>
1	1- 39	Partial Matriculation	16
2	40- 99	Reasonable Matriculation Few General Education Options	17
3	100-199	Full Matriculation More General Education Options	10
4	200-299	Matric. + General Education Options, Modest Minor Patterns	1
5	300-399	Matric+ General Education Options Reasonable Minor Patterns	1
6	400+	Matric+ General Education Options Comprehensive Vocational + Technical Patterns	0

The cost of school facilities can vary with the type of facility desired, cost of materials, and how busy construction companies are when school buildings are needed. Often schools can be constructed at a cost within the allowances given in provincial grants. Some "rule of thumb" costs based on recent school construction in C. D. 15 are presented in Table 17.

^{1/} Downey, L.W., op. cit.

Table 17

SELECTED SCHOOL CONSTRUCTION DATA JULY 1, 1967 - JUNE 30, 1968^{1/}

Name		Type of Construction	Gross Sq. Ft.	Total Approximate Cost \$	Per Sq. Ft.	Paid For Locally (Per Sq. Ft.)
Spirit River	47	New One-Room Portable School	1,104	14,329	12.98	-
High Prairie	48	New Two One-Room Portable Schools	1,824	19,808	10.86	-
Northland	61	New One-Room Portable School	780	10,147	13.01	-
Northland	61	New One-Room Portable School	780	11,310	14.50	-
Ft. Vermilion	52	New Four General Classrooms (Elementary & Junior High School)	4,416	63,064	14.28	-
High Prairie	48	Addition 1 Science Experience 1 Library, 1 Home Ec. 1 Ind. Arts Shop (Elementary, Junior & Senior High Schools)	16,480	337,345	20.47	3.73
Grande Prairie	2357	Addition 3 General Classrooms 2 Auxiliary, 1 Library	9,410	152,347	16.19	.19
Grande Prairie	1	Addition 2 Science Experience 1 Home Ec. 1 Ind. Arts 1 Language Lab. (High School)	10,210	169,179	16.57	-
Peace River	10	Addition 4 General Classrooms 1 Science Experience 1 Auxiliary 1 Library	10,902	221,310	20.30	3.73
High Prairie	48	New 9 General Classrooms 3 Science Experience 2 Auxiliary, 1 Library 1 Gym, 1 Home Ec. 1 Business Education 1 Language Lab, 1 Stage 1 Ind. Arts, 1 Typing (Junior, and Senior High Schools)	52,540	946,245	18.01	1.01

^{1/} School Buildings Branch, Alberta Department of Education. Unpublished data.

HEALTH IN C.D. 15

Introduction

The health of the population of C.D. 15 is affected by many factors such as number and location of hospitals, number of doctors, public health services, levels of nutrition and housing and sanitary practices. Statistics are available on the number and type of medical services, the extent to which they are used and the incidence of various diseases. The state of nutrition and sanitation and local attitudes toward health are observed by public health personnel and are reported in the various health unit reports.

In this section, health will be discussed under the following sub-headings: 1) "Medical Institutions" serving the population of C.D. 15, 2) "Medical Staff" within these institutions and 3) briefly and in general terms, the "Health of the Population".

Medical Institutions

The northern and eastern portions of C.D. 15 are served jointly by the Alberta Department of Public Health and the Department of National Health and Welfare. (See Figure 6.) The federal agency serves only the registered Indians who comprise about one third of the total population.

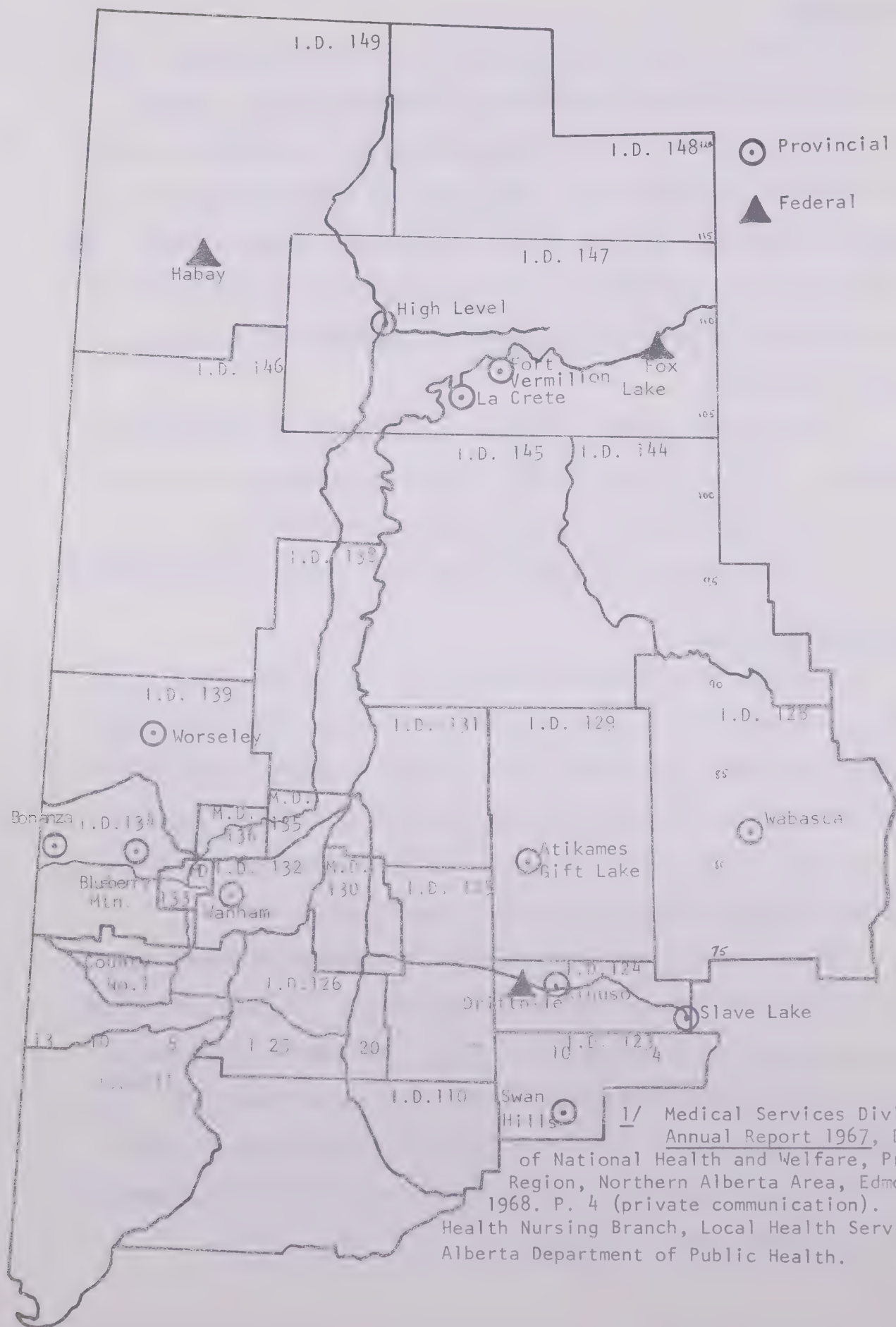
In areas to the south, the native and white population are served by provincial and municipal institutions. (See Figures 6 and 7.)

The provincial nursing service, with its stations in remote areas, serves both the native and the white populations. The total cost of the nursing stations is met roughly as follows: the Department of Health, 55%; the Department of Municipal Affairs, 35%; patient fees, 10%. In 1967, the total cost of the nursing stations in C.D. 15 was \$113,000.

The locations of federal and provincial nursing stations throughout C.D. 15 is illustrated in Figure 6.

Figure 6

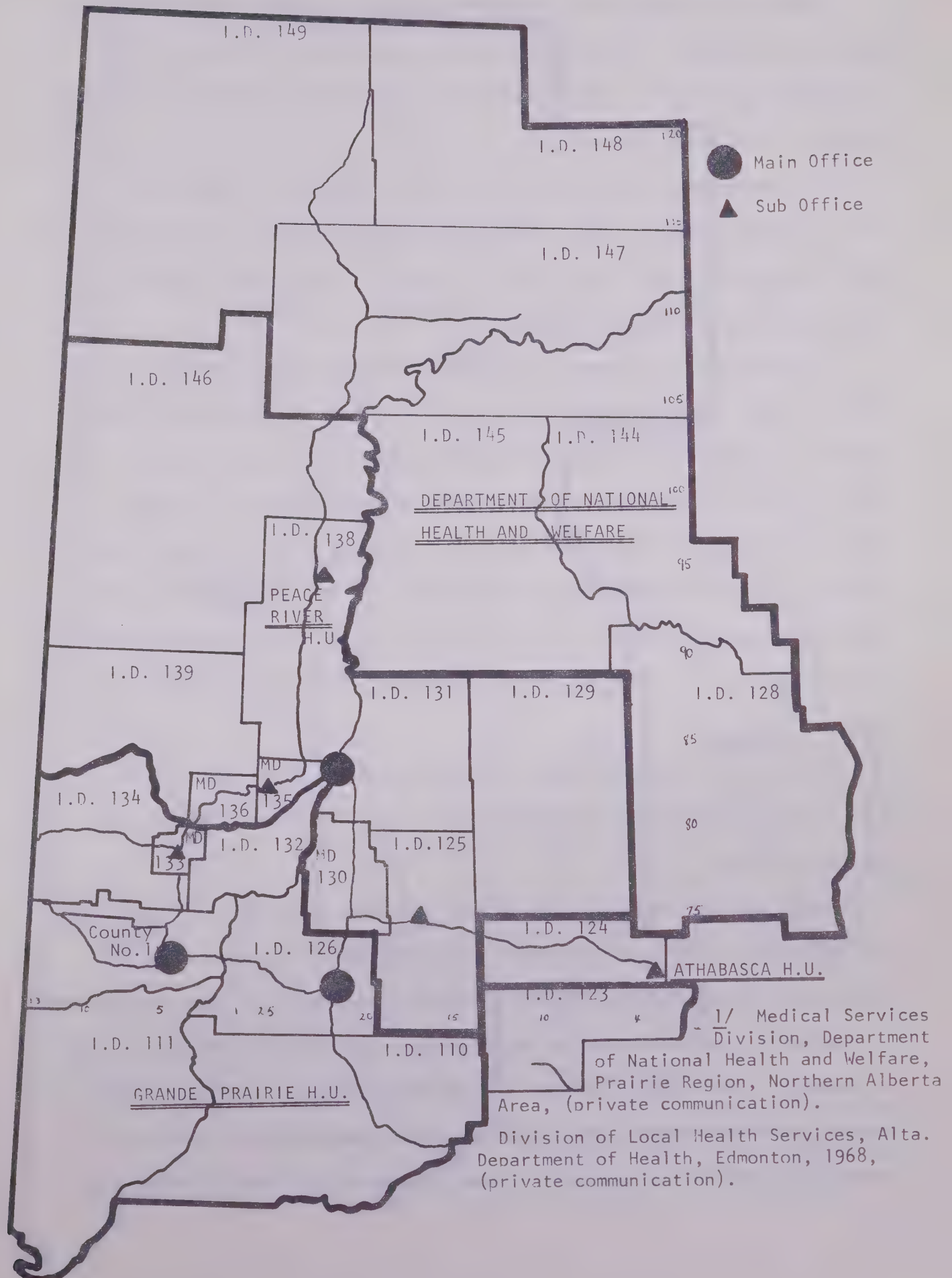
PUBLIC HEALTH NURSING STATIONS - 1968 ^{1/}



^{1/} Medical Services Division; Annual Report 1967, Dept. of National Health and Welfare, Prairie Region, Northern Alberta Area, Edmonton, 1968. P. 4 (private communication). Public Health Nursing Branch, Local Health Services, Alberta Department of Public Health.

Figure 7

PUBLIC HEALTH INSTITUTIONS,
SERVING C.D. 15 in 1968 ^{1/}



Three local health units presently serve the southern and northwest portion of C.D. 15. They are the Peace River, Grande Prairie, and the Athabasca health units. Their boundaries and office locations are illustrated in Figure 7.

The Improvement District No. 123 is not served by a health unit, since its population in 1966 numbered only eight persons. A municipal nurse serves the town of Swan Hills in this I.D., on a part-time basis, commuting from Fort Assinaboine.

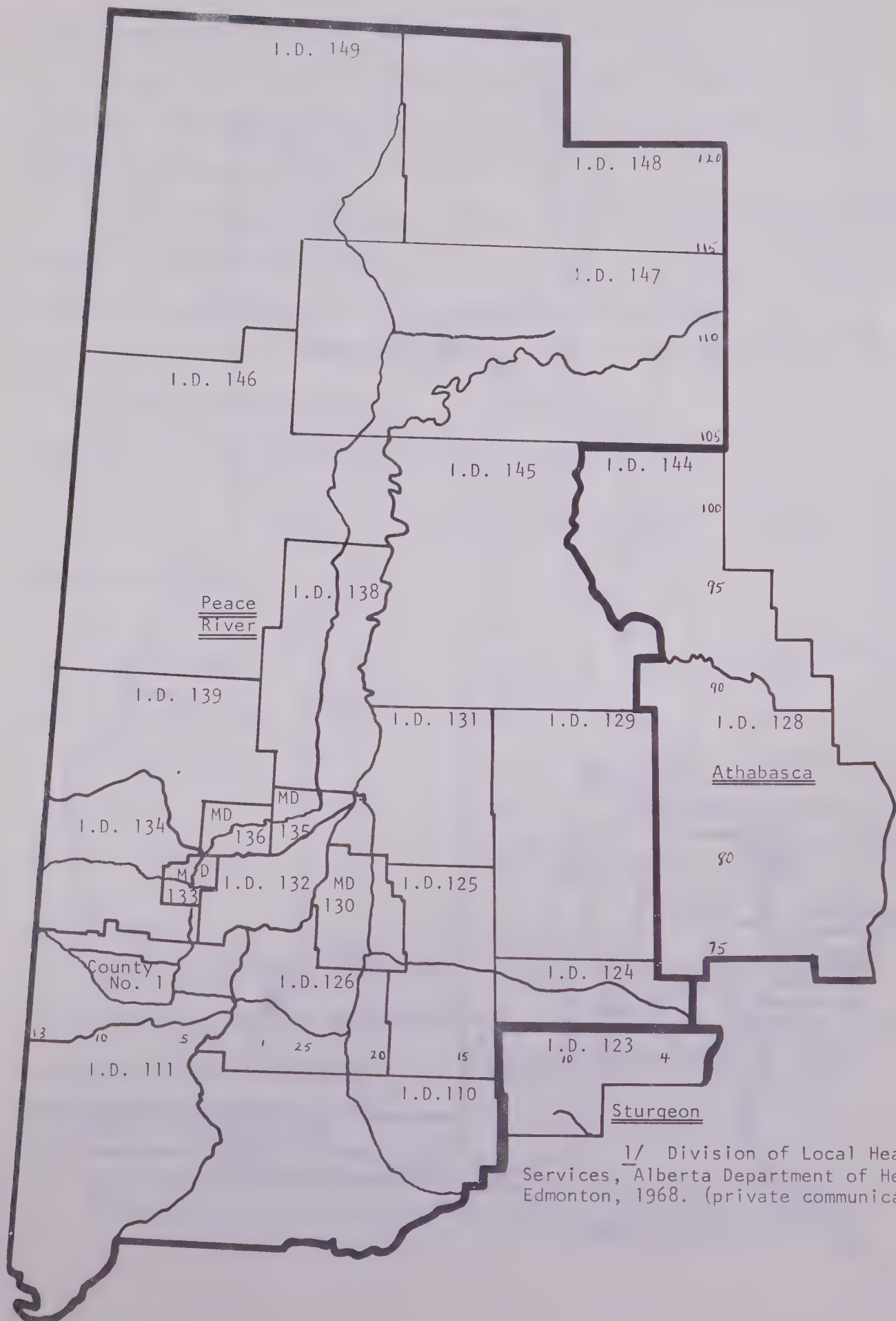
The province is presently planning to establish nine large public health regions to serve the entire province, replacing the twenty-five health units and ultimately, the federal responsibilities for public health as well. Local health boards will be relieved of the responsibility of paying and recruiting their own professional staff, and financing their own buildings. They will be left with the responsibility for clerical and maintenance staff. All areas will be taxed an equal amount (about one mill) on their equalized assessment, to finance these health regions.

However, even with enlarged regions, because of the vast area of C.D. 15, no less than three health regions will be required to serve the census division.

There are 671 hospital beds in C.D. 15. (See Table 22 and Figure 9.) The approximate ratio of population to hospital beds is 132:1 compared with about 155:1 in all of Alberta. However, because C.D. 15's population is scattered, adequate service may still be a problem in some areas, such as Manning. Furthermore, if C.D. 15 had the provincial average of 155 people per hospital bed, these beds would be occupied 85% of the year, rather than 74% of the year as in Alberta generally. This is because of

Figure 8

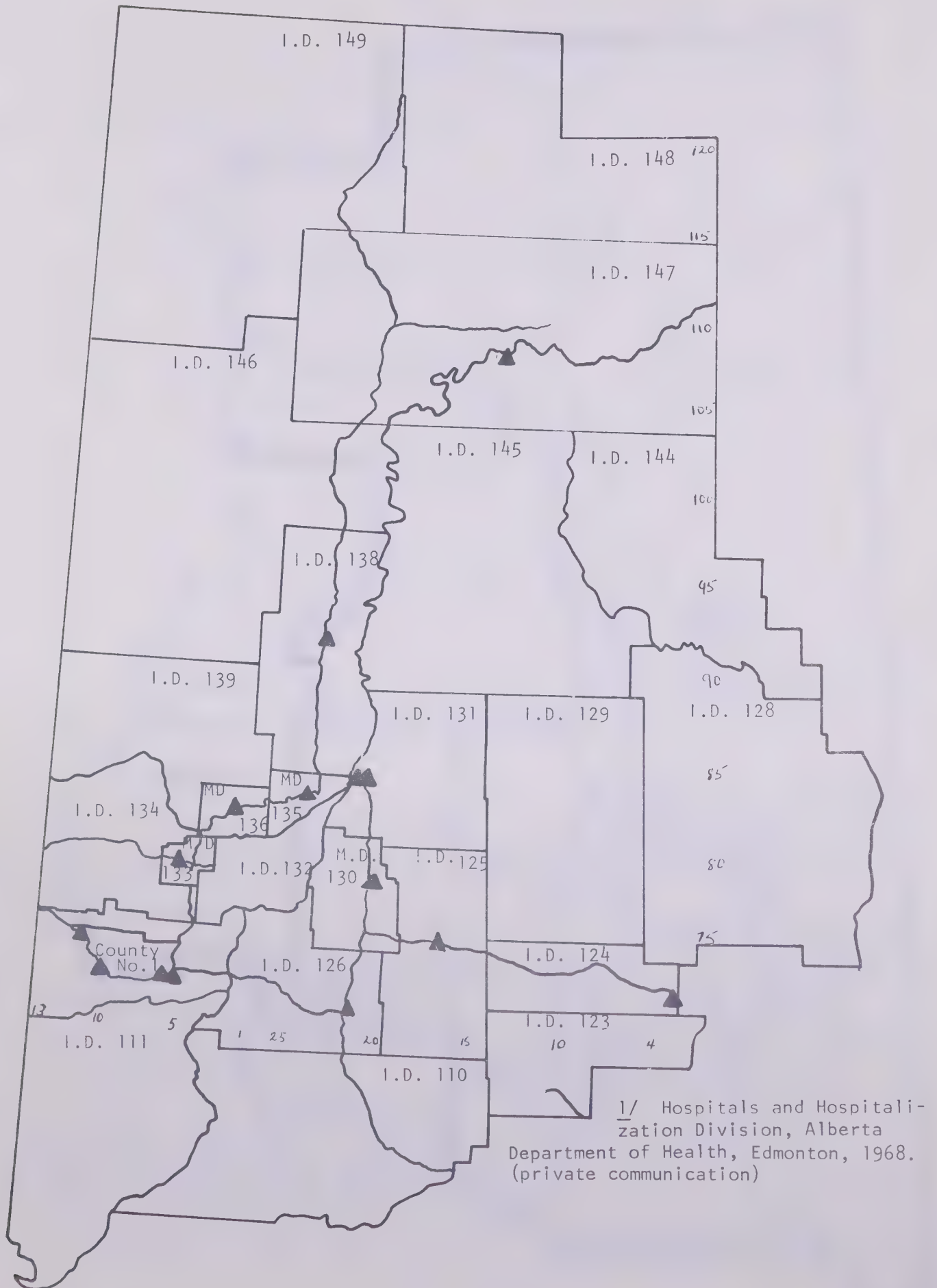
PROPOSED HEALTH REGION BOUNDARIES ^{1/}



^{1/} Division of Local Health Services, Alberta Department of Health, Edmonton, 1968. (private communication)

Figure 9

LOCATION OF HOSPITALS IN C.D. 15 - 1968 ^{1/}



higher hospitalization rates. (See Table 23.)

It would appear that the greatest need for hospital beds in C.D. 15 is found in the Manning area, and that the Beaverlodge and Berwyn hospitals serve too small an area. (See Table 22.)

On the average, hospitals cost \$27 per square foot or \$18,000 per bed.^{1/} However, hospital construction costs vary directly as the costs of materials and transportation and inversely as how busy contractors are in any particular year. Operating costs in 1967 for selected hospitals in C.D. 15 are tabulated below:

Table 18 HOSPITAL OPERATING COSTS - 35-99 Beds ^{1/}

	<u>Spirit River</u>	<u>Fairview</u>	<u>High Prairie</u>	<u>McLennan</u>
Salaries and Wages				
Total	240,973	224,217	345,521	206,738
Per Patient Day	17.72	18.06	17.85	16.47
Total Operating Costs	388,353	369,046	564,771	259,260
Per Patient Day	28.55	29.71	29.18	28.62
Per Bed	8,800	7,400	7,800	6,100
Number of beds	44	50	72	59

Medical Staff

There are about half as many doctors and chiropractors and one third as many dentists relative to the population, in C.D. 15 as in Alberta generally. However, there are twice as many health nurses as elsewhere. (See the table on the following page.)

^{1/} Research and Development Branch, Hospitals and Hospitalization Division, Alberta Department of Health. (private communication)

Table 19 PROFESSIONAL HEALTH STAFF TO POPULATION RATIOS* in C.D. 15

	Approximate Number (1968) C.D. 15	Staff to Population Ratio C.D. 15	Staff to Population Ratio Alberta
Doctors	50 ^{1/}	1:1,767	1:832
Dentists	14 ^{2/}	1:6,310	1:2,710
Nurses	39 ^{3/}	1:2,265	1:4,139
Chiropractors	5 ^{4/}	1:17,669	1:9,576
Populations (1966) ^{5/}		88,344	1,436,474

* Ratios are overstated slightly because 1968 staff figures and 1966 population figures are used.

Table 20 MEDICAL STAFF IN C.D. 15 - 1968
(including hospitals)

	Hospitals ^{6/}	Doctors	Dentists	Chiropractors
Beaverlodge	1	1	2	
Berwyn	1	1		
Falher		1		
Fairview	1	3	1	
Fort Vermilion	1	1		
Grande Prairie	2	15	7	2
High Prairie	1	5		1
Hythe	1	1		
Keg River		1		
McLennan	1	3		
Manning	1	2		
Peace River	2	7	3	2
Rainbow Lake	1			
Sexmith	1			
Slave Lake	1	2		
Spirit River	1	3		
Valleyview	1	2		
C.D. 15 - Total	17	50	14	5
Alberta - Total	145	1,726	530	150

^{1/} Alberta Division, Canadian Medical Association, Edmonton, 1968.
(private communication)

^{2/} Alberta Dental Association; List of Members, Edmonton, 1968.

^{3/} Public Health Nursing Branch, Local Health Services, Alberta Department of Public Health, Edmonton, 1968. (private communication)

^{4/} Alberta Chiropractic Association, Edmonton, 1968. (private communication)

^{5/} Dominion Bureau of Statistics; Population, 1966, Vol. 1 (1-2)

^{6/} Hospitals and Hospitalization Division, Alberta Department of Public Health, Edmonton, 1968. (private communication)

Table 21

PUBLIC HEALTH NURSES* - 1968 ^{1/}

	<u>C.D. 15</u>	<u>Alberta</u>
Federal nursing stations	5	25
Municipal nursing stations	<u>14</u>	<u>15</u>
Athabasca Health Unit	1**	
Grande Prairie Health Unit	10	
Peace River Health Unit	<u>9</u>	
All Health Units	20	159
City Health Departments	<u>--</u>	<u>164</u>
Total Public Health Nurses	<u>39</u>	<u>363</u>
Population (1966) ^{2/}	88,344	1,436,474

* Includes Directors and Supervisors.

** Slave Lake area only.

Table 22 HOSPITAL ADMISSIONS AND BED UTILIZATION IN C.D. 15 - 1967 ^{3/}

	<u>Bed Use</u> %*	<u>Rated Beds</u> No.	<u>Admissions</u>	
			<u>Total</u>	<u>Newborn</u>
Beaverlodge	51	30	977	40
Berwyn	51	21	512	24
Fairview	68	50	1,982	137
Fort Vermilion	73	32	1,544	197
Grande Prairie	74	130	4,655	460
Grande Prairie Aux.	92	50	79	-
High Prairie	74	72	2,523	280
Hythe	62	70	330	29
McLennan	58	59	1,532	77
Manning	135	19	1,459	121
Peace River	77	70	3,146	314
Peace River Aux.	72	50	66	-
Slave Lake	**	34	*	*
Spirit River	85	44	1,904	121
Valleyview	78	30	1,606	81
Hay Lakes	16	4	18	4
C.D. 15 Total	74	671	3,414	1,885
Alberta Total	75	13,213	307,549	30,491

* Computed as follows: $\left(\frac{\text{Patient Days}}{\text{Rated No. of Beds} \times 365} \right)$ ** Opened March, 1968. $\left(\frac{\text{Patient Days}}{\text{Rated No. of Beds} \times 365} \right)$ ^{1/} Medical Services Division, op. cit.^{2/} Ibid.^{3/} Research Branch, Hospital Services Division, Alberta Department of Health. (private communication)

The distribution of professional health staff in C.D. 15 is shown in Tables 20 and 21. In addition, the geographical distribution of health nurses in C.D. 15 is shown in Figure 6.

Health of the Population

It was pointed out earlier that if C.D. 15 had the same hospital bed/population ratio as does Alberta generally, the average hospital bed would be in use 85% of the time, or 63 more days a year than elsewhere in Alberta.

The greater use of hospital facilities may be explained in part by a higher birth rate, but more significantly, there is a higher rate of hospitalization of children and adults. (See Table 23.) Higher admission rates for children and adults are probably due to higher incidence disease and higher accident rates. The non-fatal accident rate requiring hospitalization has not been measured accurately for C.D. 15, although these are mentioned frequently in health unit reports. The incidence of more serious diseases is given in Table 24. It should be noted that tuberculosis patients are normally hospitalized in Edmonton and not in C.D. 15.

Table 23 HOSPITAL ADMISSIONS AND LENGTH OF STAY - 1967 ^{1/}

	Per 1,000 Population		
	<u>Newborn Admissions</u>	<u>Adults & Children Admissions</u>	<u>Average Stay In Days</u>
C.D. 15	21.3	252.8	8.1
Alberta	21.2	214.1	11.7

^{1/} Hospital Services Division, Alberta Department of Public Health; Annual Report 1967, Edmonton, 1968.
Dominion Bureau of Statistics; Population, 1966, Vol. I (1-2)

Table 24 SELECTED DISEASE RATES PER 100,000 POPULATION^{1/}

	-- Health Units --						Alberta (1966)
	Athabasca		Peace River		Grande Prairie		
	1967	1966	1967	1966	1967	1966	
Dysentery	78	112	16	32	-	6	21
Liver Inflammation (Hepatitis)	105	94	76	46	58	45	38
Scarlet Fever and Strep Throat	27	81	52	121	755	352	117
Tuberculosis	96	85	46	40	27	31	21
Venereal Disease	747	633	502	558	571	393	250

It is evident from Table 24 that the frequency of occurrence of almost all diseases is much higher in C.D. 15 than in Alberta generally. The factors most frequently mentioned by public health workers as contributing to the high incidence of disease and the high death rates in C.D. 15 are:

1. Over crowding and unsanitary living conditions.
2. Poor diets
3. Ignorance of the cause of disease.
4. Poor reporting of venereal disease cases to the Division of Social Hygiene in Edmonton
5. Apathy toward known methods of disease prevention and healthful living

Summary and Conclusions

C.D. 15 has relatively more public health nurses, about the same rate of hospital beds and fewer doctors and dentists than Alberta generally. However, the incidence of many major diseases is higher and the rate of hospitalization is higher in C.D. 15 than in Alberta.

^{1/} Summary of previously-presented data.

Many factors contribute to improved health and among these are: improved housing, more knowledge of diets and sanitation, improved incomes and money management. This points out the need for additional extension education in these areas. Programs directed toward improving income and economic conditions, and housing programs are also required.

Improved environmental conditions, better compliance with the Venereal Diseases Prevention Act, and intensive health education are unquestionably needed in C.D. 15. The best means of implementing these programs, however, must be carefully weighed, since general apathy render ineffective the most costly and well-planned health programs. It would appear that positive values toward health and well-being need to be fostered; positive values which would, in turn, provide the spark of individual and local initiative for general improvement in health through better and more effective health programs.

WELFARE IN C.D. 15

Introduction

The amount of welfare issued and the number of people receiving welfare payments is a result of a number of factors, among which are the number of employment opportunities, the age structure of the population, health and family stability. Expenditures in the more permanent types of welfare such as pensions are more a result of age, health and family stability factors: expenditures in temporary types of welfare are related more to employment opportunities.

There are six regional offices of the Department of Public Welfare serving Census Division 15 (C.D. 15). These are Grande Prairie, Peace River, High Prairie, Athabasca, Barrhead and Whitecourt. The Athabasca, Barrhead and Whitecourt regional offices have part of their areas within C.D. 15 and part of their areas outside of this census division. Whenever possible, the statistics for these offices include only that part of the region within C.D. 15.

Welfare is discussed under the headings of pensions, long-term social allowance, short-term social allowance, municipal assistance, and assistance issued by the Indian Affairs Branch. Pensions include old age assistance, blind persons' allowances, disabled persons' allowances, mothers' allowances and disabled persons' pensions. Short-term social allowance includes all social assistance and social allowance issued by voucher. Long-term social allowance includes social allowance issued by payroll, hospital and medical allowances and guardians' social allowance. Municipal assistance includes all assistance issued by municipalities to their residents. Municipal assistance is a type of short-term social allowance but it is issued by the municipalities

and 80% of the cost is then refunded to the municipality by the province. Public assistance issued by Indian Affairs includes all welfare assistance paid to residents of reserves by the Indian Affairs Branch, Canada Department of Indian Affairs and Northern Development.

Short-term social allowance, municipal assistance, and public assistance issued by Indian Affairs can probably be affected by manpower mobility programs and job development programs. Other forms of assistance can be affected indirectly through family life, education, health improvements, and housing programs. The rates of some types of assistance such as old age pensions cannot be changed.

Statistics in each of the above categories will be given by several different areas. The area served in C.D. 15 by each regional office of the Department of Public Welfare will be given as well as a total or average value for all of C.D. 15 and for Alberta. These regional offices do not serve the population living on Indian reserves. Indian reserves are served by the Indian Affairs Branch, Canada Department of Indian Affairs and Northern Development.

Pensions

Table 25 shows the number of people receiving pensions in C.D. 15 by regional office and gives the total for the census division and Alberta. The number of cases can be found readily in statistical reports of the Department of Public Welfare, however, the amount of expenditures was not given. This amount has been estimated by taking the average expenditure per case for Alberta and multiplying by the appropriate number of cases. The number of cases given in the table is for July, 1967 but this number is not likely to fluctuate drastically because of the nature of the reasons for eligibility for pensions.

Table 25
PENSIONS
NUMBER OF CASES AND ESTIMATED EXPENDITURES
JULY 31/67

Area	No. of Cases	Av. Monthly Cost	Estimated Total Monthly Expenditures
Grande Prairie	186	-	12,923.28
Peace River	141	-	9,796.68
High Prairie	112	-	7,781.76
Athabasca	14	-	972.72
Barrhead	0	-	.00
Whitecourt	2	-	138.96
C.D. 15	455	-	31,613.40
Alberta	6,558	69.48	455,649.84

Table 26 shows some rate comparisons of the incidence of people receiving pensions. Although C.D. 15 has only 5.9% of the population of Alberta, 6.9% of the people receiving pensions live in this area. The last column in Table gives the population per case and this allows a direct comparison of different areas. This value refers to the number of people in the total population of the area served divided by the number of people receiving pensions. The higher this number the lower the rate. The relatively low numbers in the Athabasca and Whitecourt areas may be due to the relatively small population served and a change of one in the people receiving pensions makes a relatively large change in the population per case. The average for the census division is 186 people in the total population per person receiving a pension which is a higher rate than the provincial average of 220.

Table 26 NUMBER AND RATE OF PEOPLE RECEIVING PENSIONS
ALBERTA, C.D. 15 & REGIONAL OFFICES
JULY, 1967 1/

Area	Population	Percent of Alberta Population	Number of Cases	Percent of Alberta Cases	Population Per Case
Grande Prairie	36,024	2.5	186	2.8	194.7
Peace River	27,880	1.9	141	2.2	197.8
High Prairie	17,363	1.2	112	1.7	155.0
Athabasca	1,184	.1	14	.6	85.6
Barrhead	1,500	.1	0	0	-
Whitecourt	235*	.0	2	0	118.0
C.D. 15**	84,466	5.9	455	6.9	185.6
Alberta	1,443,014	100.0	6,558	100.0	220.0

* This number includes 129 from I.D. 149 and 150 from I.D. 96 which are not covered by any of the regional offices.

** One-half population in I.D. 110, the other half in Grande Prairie.

Long-Term Social Allowance

Table 27 shows the number of people receiving long-term social allowance and an estimate of the total expenditure in July, 1967. Expenditures were estimated by taking the Alberta average cost per case and then multiplying by the appropriate number of cases. It is estimated that over \$142,000 per month is received by people in C.D. 15 in long-term social allowance payments.

1/ Number of cases taken from special tabulations by the Alberta Department of Public Welfare. Population taken from Canada Census, 1966, rates computed by Rural Development Research Branch.

Table 28 gives comparative rates of the incidence of people receiving long-term social allowance. C.D. 15 has 5.9% of the Alberta population but has 7.3% of the total Alberta long-term social assistance cases. If the total people in the population per case is obtained, C.D. 15 has 76 people in the population per one assistance case compared with 95 for Alberta. This illustrates in a slightly different way that C.D. 15 has a higher rate of people on long-term social assistance than Alberta.

Table 27
LONG-TERM SOCIAL ALLOWANCE
NUMBER OF CASES AND ESTIMATED EXPENDITURES
ALBERTA, C.D. 15 & REGIONAL OFFICES
JULY, 1967 1/

<u>Area</u>	<u>Number of Cases</u>	<u>Estimated Total Expenditure*</u>
Grande Prairie	466	59,521.86
Peace River	313	39,973.23
High Prairie	307	39,206.97
Athabasca	30	3,831.30
Barrhead	0	-
Whitecourt	1	127.71
C.D. 15	1,117	142,652.07
Alberta	15,237	1,945,917.00

* Expenditures were calculated by using the Alberta average of \$127.71 per case and multiplying by the appropriate number of cases.

1/ Population statistics from Census of Canada, 1966; expenditures supplied by Alberta Department of Public Works, rates calculated by Rural Development Research Branch.

Table 28
LONG-TERM SOCIAL ALLOWANCE
NUMBER OF CASES AND RATES OF OCCURRENCE
ALBERTA, C.D. 15 & REGIONAL OFFICES
JULY, 1967 ^{1/}

Area	Population	Percent of Total Alberta Population	Number of Cases	Percent of Total Alberta Cases	Pop. Per Case
Grande Prairie	36,024	2.496	466	3.058	77.3
Peace River	27,880	1.932	313	2.054	89.1
High Prairie	17,363	1.203	307	2.014	56.6
Athabasca	1,184	.082	30	.196	39.5
Barrhead	1,500	.103	0	.0	.0
Whitecourt	236	.016	1	.006	236.0
C.D. 15	84,466	5.43	1,117	7.330	75.6
Alberta	1,443,014	100.0	15,237	100.0	94.7

Short-Term Social Allowance

Expenditures and comparative rates of expenditures are shown in Table 29. It is estimated that over \$68,000 per month is received by people in short-term social allowance payments. C.D. 15 has 5.9% of the Alberta population but receives 18.7% of the Alberta total of short-term social allowance payments. This is more than three times the Alberta rate. This is again illustrated by the expenditures per capita shown in the right-hand column. These expenditures were calculated by dividing the population into the expenditures. Short-term social allowance is distributed at the rate of \$0.81 per month for every man, woman and child in C.D. 15 compared with \$0.25 for Alberta.

^{1/} Population statistics from Census of Canada, 1966; expenditures supplied by Alberta Department of Public Works, rates calculated by Rural Development Research Branch.

The number of cases on short-term social allowance rolls is also relatively higher in C.D. 15 than in Alberta. C.D. 15 has 5.9% of Alberta's population but has 24.5% of the people receiving short-term social allowance. This is shown in Table 30. In Alberta, generally, there are 434 people for every short-term social allowance case, while in C.D. 15 there are 104 people for every case.

Table 29 SHORT-TERM SOCIAL ALLOWANCE
1967 MONTHLY EXPENDITURES
ALBERTA, C.D. 15 & REGIONAL OFFICES^{1/}

Area	Population	Percent of Alberta Population	Monthly Expenditures	Percent of Alta. Exp.	Exp. Per Cap. Per Mo.
Grande Prairie	36,024	2.496	31,768.13	8.662	.88
Peace River	27,880	1.932	17,569.95	4.790	.63
High Prairie	17,363	1.203	15,434.92	4.208	.89
Athabasca	1,184	.082	3,820.50	1.041	3.23
Barrhead	1,500	.103	0	-	-
Whitecourt	236	.016	0	-	-
C.D. 15	84,466	5.853	68,590.50	18.703	.81
Alberta	1,443,014	100.000	366,735.00	100.000	.25

^{1/} Population statistics from Census of Canada, 1966; expenditures supplied by the Alberta Department of Public Welfare, rates computed by the Rural Development Research Branch.

Table 30 SHORT-TERM SOCIAL ALLOWANCE^{1/}
1967 MONTHLY NUMBER OF CASES

Area	Population	Percent Of Alberta Population	Number Of Cases	Percent Of Alberta Cases	Population Per Case
Grande Prairie	36,024	2.496	330	9.930	109.2
Peace River	27,880	1.932	236	7.102	118.1
High Prairie	17,363	1.203	159	4.784	-
Athabasca	1,184	.082	90	2.708	13.2
Barrhead	1,500	.103	0	0	-
Whitecourt	236	.016	0	0	-
C.D. 15	84,466	5.853	815	24.526	103.6
Alberta	1,443,014	100.000	3,323	100.000	434.3

Municipal Assistance

Municipal assistance is temporary assistance issued by municipalities or by provincial welfare offices on behalf of municipalities to their permanent residents. The province refunds 80% of the cost of this assistance to the issuing municipality. Table 31 shows the total expenditure under the category of municipal assistance for C.D. 15 and the areas served by the regional offices of the department of Public Welfare for 1964 and 1966. The expenditures given in previous tables has been a monthly expenditure but the expenditures shown in Table 32 are total expenditures for the year. An average of \$5.65 per year is spent on this type of welfare payment for every person in the census division. The total amount of municipal assistance increased by 15.4% in C.D. 15 between 1964 and 1966.

^{1/} Population statistics from Census of Canada, 1966; number of cases supplied by the Alberta Department of Public Welfare, rates computed by the Rural Development Research Branch.

Table 32 shows the number of heads of families receiving municipal assistance in January, 1961. The head of family as used in this table could be a single person or a married person with dependents. There are 228 people in C.D. 15 for every family receiving municipal assistance.

Table 31
EXPENDITURE ON MUNICIPAL ASSISTANCE
C.D. 15 & REGIONAL OFFICES
1964 & 1966

Area	Expenditures in 1964	Expenditures in 1966	Percent- age Increase	Pop. in 1966	Exp. Per Capita Per Year
Grande Prairie	94,693.66	163,592.53	65.757	36,024	\$ 4.54
Peace River	121,000.06	121,067.95	.056	27,880	4.34
High Prairie	140,234.68	116,380.25	-17.01	17,363	6.70
Athabasca	51,610.49	66,150.52	28.172	1,184	55.87
Barrhead	218.90	2,909.40	12.291	1,500	1.94
Whitecourt	243.70	5,303.35	20.762	236	22.47
C.D. 15	412,001.39	475,404.00	15.388	84,466	5.63

Table 32
HEADS OF FAMILIES ASSISTED IN JANUARY 1967^{2/}
C.D. 15 & REGIONAL OFFICES

Area	Population	Percent of C.D. 15 Cases	Number of Cases	Percent of C.D. 15 Cases	Population Per Case
Grande Prairie	36,024	42.649	114	30.810	316
Peace River	27,880	33.007	104	28.108	268
High Prairie	17,363	20.556	90	24.324	193
Athabasca	1,184	1.401	58	15.675	20
Barrhead	1,500	1.775	2	.540	750
Whitecourt	236	.279	2	.540	118
C.D. 15	84,466	100.000	370	100.000	228

1/ Expenditures obtained from the Alberta Department of Public Welfare; population statistics from Census of Canada, 1966, calculations made by Rural Development Research Branch.

2/ Number of cases obtained from the Department of Public Welfare; population from Canada Census, 1966, calculations made by Rural Development Research Branch.

Public Assistance on Indian Reserves

Public assistance on Indian reserves is issued by the Indian Affairs Branch. The statistics given in this report come under the categories of people on permanent welfare and people receiving emergency welfare. The statistics give the number of people receiving welfare and not the heads of families as shown in the rest of the report. An estimate of the number of heads of families can be derived from the statistics given by dividing the number of people reported by 5.1 which is the average number of people per household receiving public assistance from the Indian Affairs Branch in Alberta in February, 1966.

In C.D. 15 there were 5.79 people in the total population for every person on permanent welfare and 2.58 people in the population for every person on emergency welfare. (See Table 33.) This means that 17.3% of the total population are on permanent welfare and 38.7% are on temporary welfare each month. The total expenditure on welfare on Indian reserves comes to \$96 per capita per year.

Table 33 WELFARE ON INDIAN RESERVES^{1/}
C.D. 15

	<u>Number or Amount</u>	<u>Population</u>	<u>Rate</u>
No. of People on Permanent Welfare	669	3,878	5.79 Persons per Case
Av. Monthly No. of People on Emergency Welfare	1,501	3,878	2.58 Persons per Case
Total Welfare Costs	\$372,408	3,878	96.04 Per Capita per Year

^{1/} Statistics compiled by Rural Development Research Branch from data supplied for Indian reserves by the Indian Affairs Branch.

Welfare in Alberta's Census Division 15; A Summary

Welfare can be discussed under the headings of pensions, long-term social allowance, short-term social allowance, municipal assistance and public assistance. The more temporary forms of assistance such as short-term social allowance and municipal assistance are more affected by employment opportunities than are the more permanent types of assistance. Some of the more permanent types of assistance can be affected indirectly through preventive social services programs such as family living courses, housing programs, health education, etc. In every category of welfare for which comparable statistics are available for Alberta, the C.D. 15 rates are higher. This is shown in Table 35 where the lower population per case statistics indicate a higher incidence of welfare recipients.

Table 34 shows an estimate of the yearly expenditures on various types of welfare payments for C.D. 15. These estimates are derived from averages and sometimes from the rate for a single month and so should be regarded as estimates and not as actual expenditures. This summary does give some idea of the magnitude of welfare expenditures in C.D. 15.

Table 34 ESTIMATED YEARLY WELFARE EXPENDITURES
C.D. 15

Social Allowance, Short-Term - 12 Months @ 68,593.50 =	823,122.00
Social Allowance, Long-Term - 12 Months @ 142,652.07 =	1,713,024.84
Pensions - 12 Months @ 31,613.40 =	379,360.80
Municipal Assistance, Total -	475,404.00
Welfare on Indian Reserves -	<u>372,408.00</u>
Total for C.D. 15	3,765,319.64

Table 35

ESTIMATED MONTHLY RATE OF HEADS
OF FAMILIES RECEIVING WELFARE ASSISTANCE
C.D. 15 and REGIONAL OFFICES
1966

	POPULATION PER CASE			
	<u>Pensions</u>	<u>Long Term Social Allowance</u>	<u>Short Term Social Allowance</u>	<u>Municipal Assistance</u>
C.D. 15	185.6	75.6	103.6	228
Alberta	220.0	94.7	434.3	NA

NA - Not Available.

HOUSING CONDITIONS IN C. D. 15

The condition of housing in an area is a good indicator of levels of material well-being. If economic adjustment and development is to provide better living conditions for C.D. 15 families, it is necessary to appraise the current housing conditions to determine the housing needs and the costs of providing for the housing needs. Data for appraising housing conditions in the rural areas is sketchy but some of the needs can be approximated from the 1961 D.B.S. housing census.

Of all the homes in C.D. 15, 39% are twenty-three years old or older, 36% of the homes need minor repairs and 15% need major repairs. For Alberta, the figures are 45%, 23% and 8% respectively. In general, then, there are 6% more homes in Alberta which are over 23 years old, but the homes on the provincial basis are in better condition, with 13% fewer homes needing minor repairs. Almost twice as many homes in C.D. 15 need major repairs as in Alberta generally.

A comparison of some of the home services follows:

- 63% of the homes in C.D. 15 have no running water compared to 21% of the homes in the province;
- 69% have no bath or toilet facilities compared to approximately 25% for the province;
- 33% have furnaces compared to 72% in the province;
- 58% have gas or liquid fuel heat compared to 81% for the province.

A comparison of living conveniences reveals the following:

- 64% of the homes in C.D. 15 had refrigeration vs. 88% for the province;
- 5% had television vs. 72% provincially;
- 43% had no cars vs. 25% (Some of the farm families use trucks for transportation which are not reported in the above values.)

Comparing dwellings which reported cars in C.D. 15 with those in some other census divisions, one can appraise the transportation available to the residents.

Table 36 COMPARISON OF HOUSEHOLDS REPORTING CARS FOR SELECTED CENSUS DIVISIONS

Census Division	Households	Number With Cars	Percent With Cars
12	11,000	6,000	55
13	12,000	7,000	58
14	5,000	3,000	60
15	19,000	11,000	58
Alberta	350,000	261,000	75

Of the residents in C.D. 15, 81% owned their homes in 1961 compared to 71% in the province.

Table 37 TYPE, AGE AND CONDITION OF DWELLINGS - 1961

	C. D. 15		Grande Prairie (City)		Alberta
	No.	% Of Total	No.	% Of Total	% Of Total
Type of Home:					
Single Detached	16,872	91	1,786	83	78
Single Attached	645	3	--	--	5
Apartments	506	3	291	1	16
Mobile	587	3	--	--	1
Total	18,610	100	2,163	*	100
Period of Construction:					
Before 1920	715	4	--	--	19
1920-1945	6,617	35	580	27	26
1946-1959	10,182	55	1,396	64	50
1960-1961	1,096	6	118	5	5
Condition of Dwelling:					
Good	9,058	49	1,073	50	69
Needs Minor Repair	6,639	36	732	34	23
Needs Major Repair	2,913	15	358	17	8

* Original sample did not add up to total.

Table 38 LENGTH OF OCCUPANCY - TENURE - RESIDENTIAL USE
1961

	<u>C. D. 15</u>		<u>Grande Prairie (City)</u>		<u>Alberta</u>
	<u>No.</u>	<u>% Of Total</u>	<u>No.</u>	<u>% Of Total</u>	<u>% Of Total</u>
Tenure:					
- Owned	15,061	81	1,356	63	71
- Rented	3,549	19	807	37	29
Length of Occupancy:					
- 1 year	3,176	17	606	28	19
- 1-2 years	2,792	15	561	26	19
- 3-5 years	3,636	19	467	21	20
- 6-10 years	3,297	18	255	12	16
- 10 years	5,709	31	274	13	26
Residential Use:					
- Residential and Business	628	3	132	6	3

Table 39

ROOMS PER PERSON - PERSONS PER ROOM
1961

	C. D. 15		GRANDE PRAIRIE		ALBERTA
	No.	% Of Total Homes	No.	% Of Total Homes	% Of Total Homes
No. of Rooms:					
1	1,329	7	--	--	3
2	2,142	12	127	6	5
3	2,657	14	233	11	10
4	4,199	23	683	32	23
5	3,789	20	657	30	25
6	2,312	13	227	10	19
7	1,175	6	102	5	8
8	596	3	--	--	4
9	312	1	--	--	2
10+	198	1	--	--	1
Average Rooms Per Dwelling:	4.3		4.5		4.9
Persons Per Room:					
0-.5	4,552	24	523	24	31
.6-1.0	7,743	41	1,197	55	51
1.1-1.5	2,969	16	327	15	12
1.6-2.0	1,631	9	--	--	4
2.1-2.5	491	3	--	--	1
2.6+	1,224	7	--	--	1
Average Persons Per Room:	.97		.82		.76

Table 40

LIVING CONVENIENCES - HOME VALUES
HOME MORTGAGES

Conveniences	C. D. 15		GRANDE PRAIRIE		ALBERTA
	No.	% Of Total	No.	% Of Total	% Of Total
Refrigeration (Total)	11,859	64	1,932	89	88
- mechanical	11,329	61	1,927	89	87
- ice box	370	2	--	--	--
- other	160	1	5	--	--
Home Freezer	4,837	26	553	26	30
No Refrigeration	6,751	36	231	11	12
Television	927	5	178	8	72
Car - Total	10,673		1,661	77	75
- one	10,057	54	1,525	70	67
- two or more	616	3	136	6	8
no cars	7,937	43		23	25
Values of single, owner-occupied, non-farm dwellings:					
Total Dwellings	7,038		Not Available		100
- \$3,000	2,799	40	"		10
- 3,000-7,499	2,532	36	"		17
- 7,500-12,499	1,145	16	"		25
-12,500-17,499	436	6	"		32
-17,500-22,499	110	2	"		10
-22,500-27,499	--	--	"		3
-27,500-32,499	--	--	"		1
-32,500-37,499	--	--	"		1
- 37,500+	--	--	"		1
Median Value	4,296				12,116
Mortgages:					
- no mortgage	5,802	83	Not Available		51
- 1st mortgage	1,211	17	"		45
- more than one	--	--	"		4
TOTAL HOUSEHOLDS	18,610		2,163		

Table 41

HOME CONVENIENCES
1961

Conveniences	C. D. 15			GRANDE PRAIRIE			ALBERTA	
	No.	%	% Of Main Item	No.	%	% Of Main Item	% Only	% Of Main Item
Total Dwellings	18,610	100		2,163	100		100	
Without Running Water	11,728	63		438	20		21	
With Running Water	6,882	37		1,725	80		79	
-municipal sources	4,826		70	1,715		99		84
-private source	2,056		30	-*		-*		16
Hot and Cold	5,856	31		1,639	76		75	
Bath	5,782	31		1,628	76		74	
-exclusive use	5,557		96	1,522		93		93
-shared	225		4	106		7		7
Flush Toilets	5,712	31		1,684	78		74	
-other toilets	12,898	69		464	22		26	
Sewer Connection	4,509	24		1,679	78		66	
Septic Tank	1,129	6		-	-		9	
Other Disposal	12,972	70		479	22		25	
Furnace Heat	6,157	33		1,236	57		72	
Space Heater	11,590	62		852	39		26	
Other Heat Source	863	5		-	*		2	
Coal Fuel	1,614	99		-			13	
Wood Fuel	6,121	33		-			6	
Liquid Fuel	5,273	29		-			12	
Gas: Piped								
Bottled	5,385	29		2,045	94		69	

* Small number with this convenience.

In 1965 and 1966 the Peace River Health Unit conducted a housing survey in some of the towns and villages within its jurisdiction. All of the homes were categorized in the following way:

- A. - Essentially Sound
- B. - Capable of repair or improvement to Class A Standard
- C. - Second priority demolition
- D. - First priority demolition

A total of 1,689 houses were classified in five towns or villages and 36% of the houses surveyed were classified as fit only for demolition, an additional 39% of the houses surveyed were considered 'essentially sound'. The details of the survey results are shown in Table 42 . The data from this survey seems to indicate that housing may not be as adequate as the census indicates, but the housing in C.D. 15, by any standard, is below the Alberta average.

Table 42

PEACE RIVER HEALTH UNIT HOUSING SURVEY

	Peace River		Falher		Grouard		Giroux-Ville		High Prairie		Totals	
	#	%	#	%	#	%	#	%	#	%	#	%
A*	378	53.5	73	31.6	24	22.0	21	23.9	170	30.7	666	39.4
B	149	21.1	71	30.7	3	2.8	24	27.3	169	30.5	416	24.6
C	113	16.0	56	24.3	20	18.3	26	29.5	115	20.8	330	19.5
D	67	9.4	31	13.4	62	56.9	17	19.3	100	18.0	277	16.5
Total	707	100.0	231	100.0	109	100.0	88	100.0	554	100.0	1,689	100.0
C and D but unoccupied	18	2.5	19	5.8	9	8.2	12	13.6	38	6.9	96	5.7

- * Key: A. Essentially Sound
 B. Capable of Repair or Improvement to Class A
 C. Second Priority Demolition
 D. First Priority Demolition

AGRICULTURE IN C. D. 15

by

P. J. SteImaschuk

AGRICULTURE

Background of C.D. 15

Agricultural development in Census Division 15, familiarly known as the Peace River Area, is relatively new. For one hundred years after Alexander MacKenzie made the ascent of the Peace River, the only approach to the area was by canal and river boat. Then, in 1890 the railroad reached Edmonton and settlers pursued their westward thrust in search of agricultural lands. By 1915 the Northern Alberta Railroad reached McLennan via the Lesser Slave Lake route and settling of the Peace River Area began in earnest.

Census Division 15 is a large area totalling 59,000,000 acres or 92,000 square miles. This total is almost twice the size of the total areas of New Brunswick, Nova Scotia, and Prince Edward Island, which contain a combined total of 51,000 square miles. The census division is situated in the northwest corner of the province of Alberta with the western boundary of Alberta and the C.D. being coterminous for 400 miles (twps. 53 to 126). This makes the length of the district more than half the length of the province (twps. 1 to 126). At the widest bulge (Range 16, west of the 4th Meridian), the Area is 252 miles across. Census Division 15 is bigger than 21 European countries and it is also larger than 40 of the states in the U.S.A.

The total population in the area in 1966 was 88,344 giving an approximate population density of 1 person per 1 square mile.

CLIMATE

Most of the Peace River Area receives 9 - 10 inches of rainfall in the months of May through September.^{1/} The average annual precipitation varies from 14 - 18 inches ^{2/} with the 14 inch belt originating just south of Manning and following the Peace River in a band approximately 6 miles on either side. The balance of the Peace River Area is in the 16 - 18 inch range. The evapotranspiration rate in the area varies from 15 to 16 inches ^{3/} (12.2 at Ft. Vermillion) so that the average water deficiency is 2 to 4 inches compared with the highest water deficiency for Alberta of 10 inches at Medicine Hat. Water deficiency is computed on the basis of evapotranspiration and the use of water reserves which are assumed to be 4 inches. Precipitation is also considered using the Thornthwaite method. Where the water holding capacity of soils is more than 4 inches, the surplus would be applied to the deficiency when arriving at crop production requirements.

The area in farms in C.D. 15 is primarily in the 6th temperature zone. This zone is characterized by 1800 - 2200 degree days ^{4/} and 75 - 90 frost free days. The mean spring frost date for most of the area is June 15 and the mean fall frost date is August 31 except for Ft. Vermillion, where it is August 20.

^{1/} Fig. 16; The Climates of Canada for Agriculture, The Canada Land Inventory, Report No. 3, Canada Department of Forestry and Rural Development, 1966.

^{2/} Ibid, Fig. 15.

^{3/} Ibid, Fig. 20.

^{4/} Degree-days are days with a minimum of 42°F. in the months of May to September. The mean temperatures above 42°F. are added to arrive at the total degree-days. (e.g. - A day with a mean temperature above 42°F. such as 43°F. equals one degree-day above 42°F. and a day with a mean of 44°F. equals two degree days above 42°F.) - Carder, A.C.; Climate of the Upper Peace River Region, Canada Department of Agriculture, Queens Printer, Ottawa, 1965.

The mean frost-free period is extremely variable. It is 90 days in the Grande Prairie-Beaverlodge area and also in the Rycroft-Peace River-Girouxville triangle. Much of the farm land in the Fort St. John-Manning-Nampa-High Prairie and Grande Prairie areas has an 80 day frost-free period. (See map.) Beyond this line the frost-free period is 60 days which is too short for production of most grains but would be suitable for forage production. The exception is the Ft. Vermillion area which has 73 frost-free days and where frost hazards impose the use of early maturing grain varieties.

The data in Table 1 reveals some of the differences which exist from point to point in the Peace River Area.

The variations in frost occurrences in C.D. 15 can be attributed to several factors. These include ^{1/} topography, water bodies, vegetation, altitude, human habitation as well as general spatial temperature trends.

There is a decrease in temperature due to latitude as one moves northward. However, the same latitude may have considerable variations in frost-free periods due to the above factors. Low lying areas which act as "frost hollows" for cold air to drain into may have much lower temperatures than the tops of ridges. For example, Goodfare which is 14 miles west of Beaverlodge, has a frost-free period of 61 days compared to 110 days at Beaverlodge for the period 1951-64. High altitudes, however, are generally cold. For example, Lake Louise at 5,000 feet has a much shorter frost-free period than the 93 frost-free days at Banff which is at 4,500 feet. Some areas stay warm in spite of higher altitude. For example, White Mountain Lo. at 3,600 feet and Whitecourt Lo. at 3,900 feet have 100 or more frost-free days. Both of these points have good air drainage and the cold air of the night is drained away into the lower areas, which, if they were cropped may suffer from frost damage.

^{1/} Information provided by Professor Richmond W. Longley, Department of Geography, University of Alberta.

Large bodies of water also affect temperatures and may counteract the effects of topography. For example, Embarras, at a latitude of 58° on the Athabasca River has a 100-day growing season. When one moves one mile north from the Peace River at Fort Vermilion the frost-free period changes from 76 days to approximately 58 days.

Heat from large cities radiates to modify temperature readings as well. At other points trees and shrubs prevent loss of heat from the ground and so reduce frost risk.

The variations in temperature readings make it difficult to interpolate data for those areas lacking temperature readings. Although the changeable climate contributes to the vigor of the population, it also brings about uncertainty of economic enterprises and often creates physical hardships.

The data in Table 1 reveals some of the differences which exist from point to point in the Peace River Area:

Table 1 FROST FREE PERIOD AND DATES OF SPRING AND FALL FROSTS^{1/}

1931 - 1960				
	<u>No. of Years</u>	<u>Last Spring Frost</u>	<u>First Fall Frost</u>	<u>Frost-Free Period</u>
Beaverlodge	30	May 23	Sept. 8	107
Buffalo Head Prairie	27	June 6	Aug. 16	70
Dunvegan	10	June 6	Aug. 28	82
Elmworth	22	June 24	Aug. 11	47
Fairview	29	May 23	Sept. 9	108
Fort Vermilion	30	June 6	Aug. 22	76
Goodfare	13	June 20	Aug. 14	54
Goose Mountain Forestry	12	June 19	Aug. 22	63
Grande Prairie	19	May 21	Sept. 7	108
Grouard	14	June 9	Aug. 28	79
High Prairie	30	June 5	Aug. 29	84
Keg River	25	June 18	Aug. 19	61
Kinuso	16	June 13	Sept. 2	80
Rycroft	14	June 4	Aug. 22	78
Slave Lake	30	June 8	Aug. 28	80
Wagner	18	June 4	Sept. 8	95
Whitecourt	16	June 22	Aug. 20	58
Whitecourt Forestry	18	June 10	Sept. 4	86

^{1/} Information provided by Professor Richmond W. Longley, Department of Geography, University of Alberta.

Figure 1

MEAN ANNUAL LENGTH OF FROST-FREE PERIOD DAYS

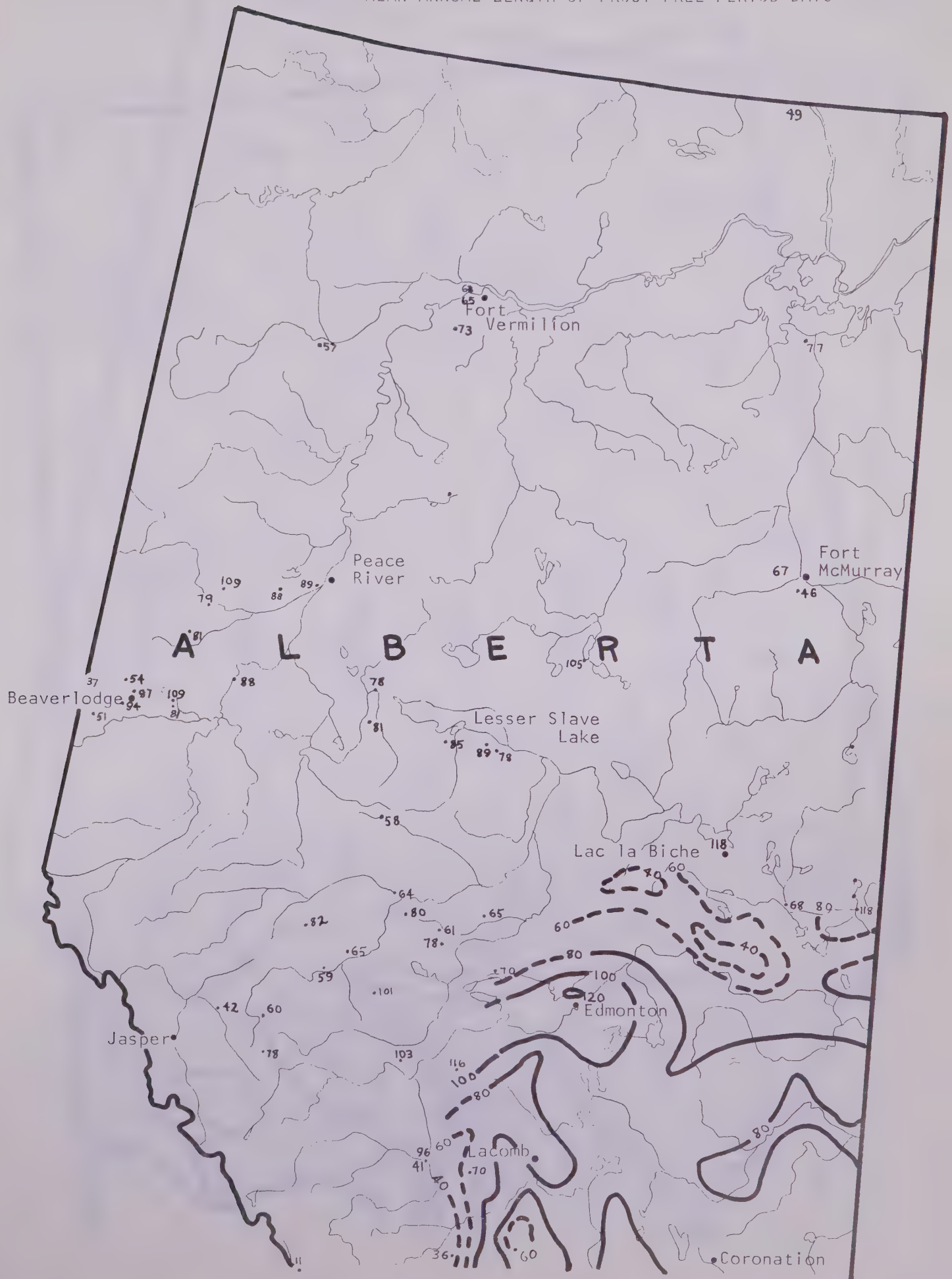


Figure 2

MEAN DATE OF FIRST OCCURANCE OF A TEMPERATURE OF 32° IN FALL

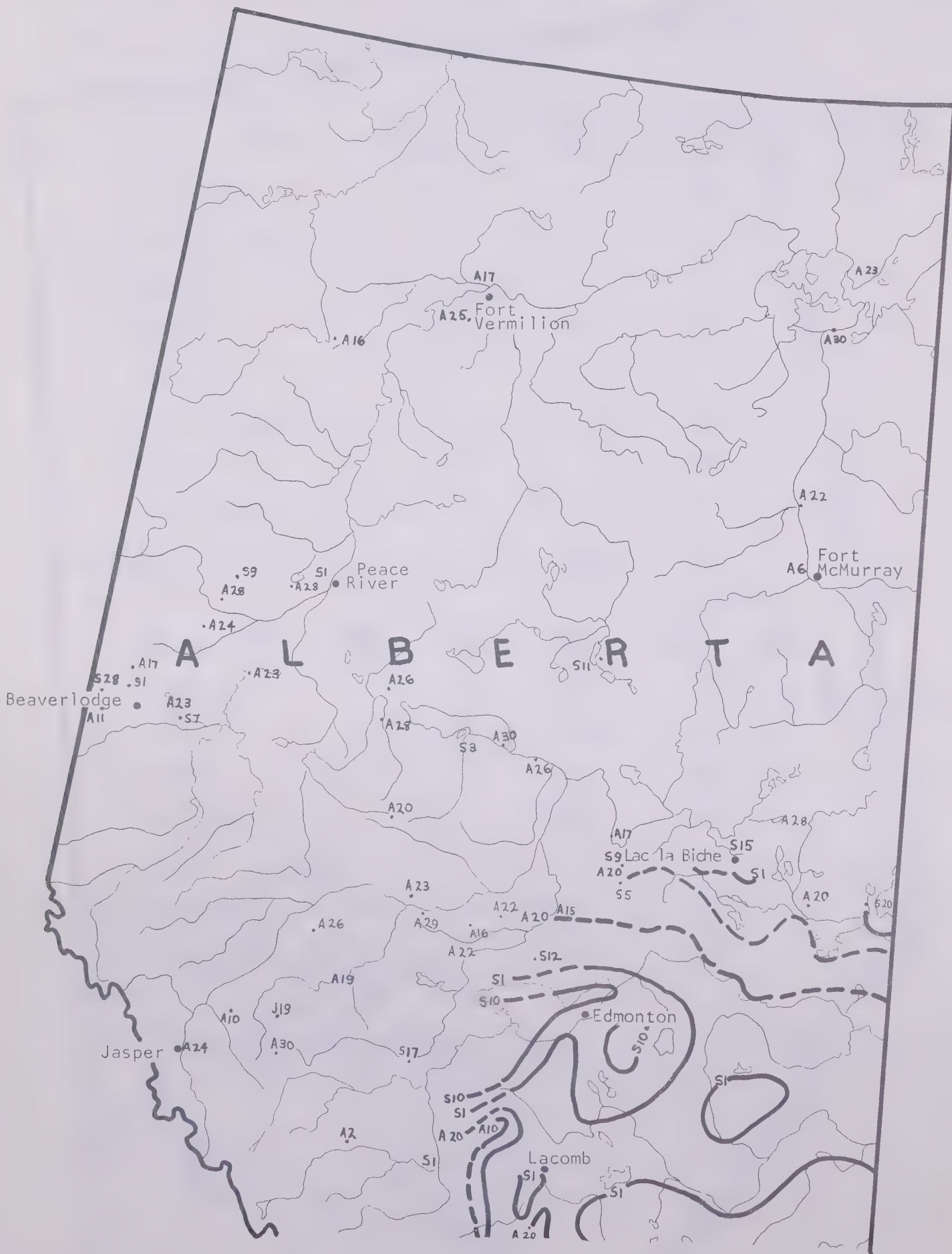


Figure 3

MEAN DATE OF LAST OCCURANCE OF A TEMPERATURE OF 32° F IN SPRING

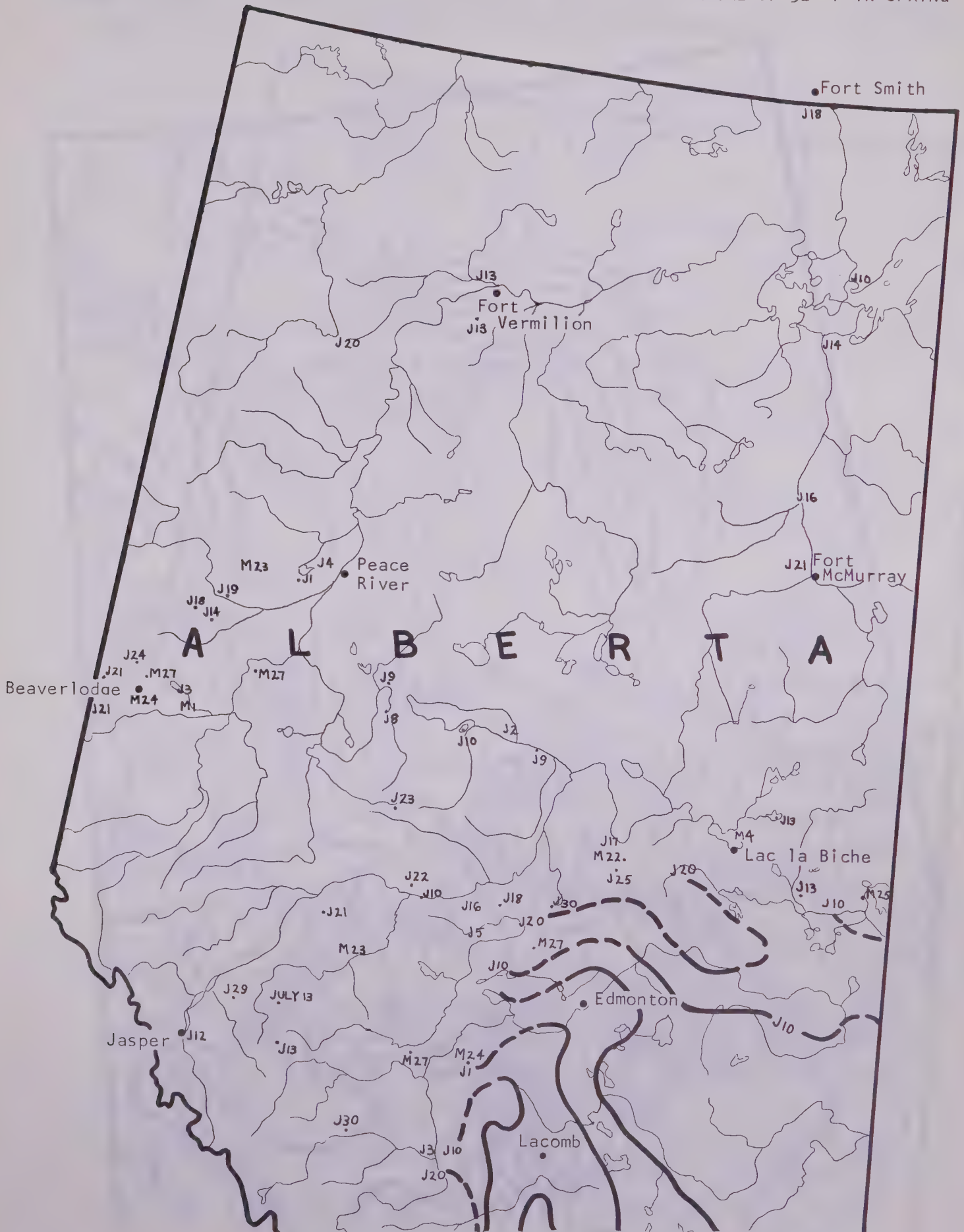


Figure 4

MEAN AMOUNT OF PRECIPITATION FROM MAY 1 - SEPT. 30 INCHES

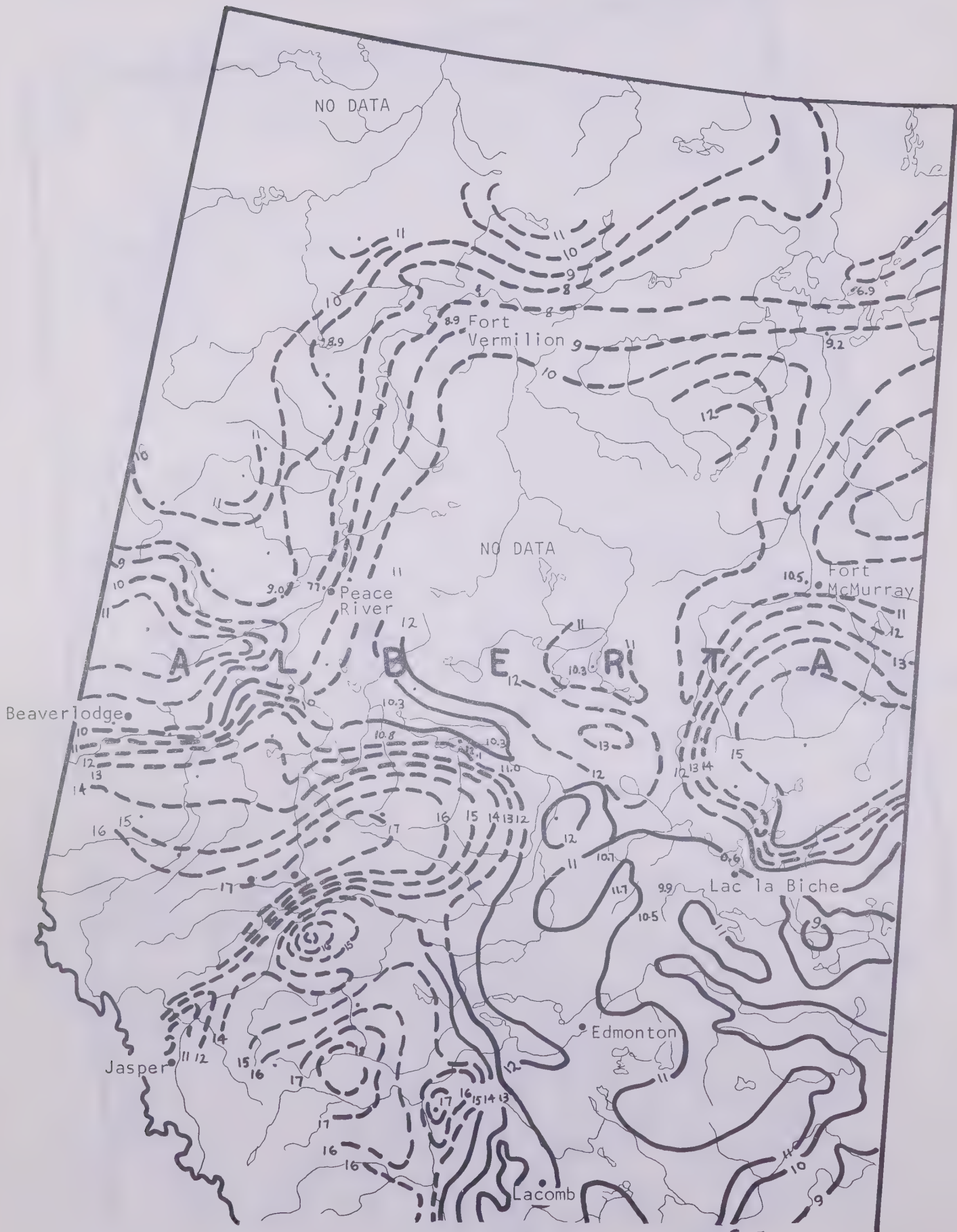


Figure 5

MEAN AMOUNT OF PRECIPITATION FROM JUNE 1 - JULY 31 INCHES

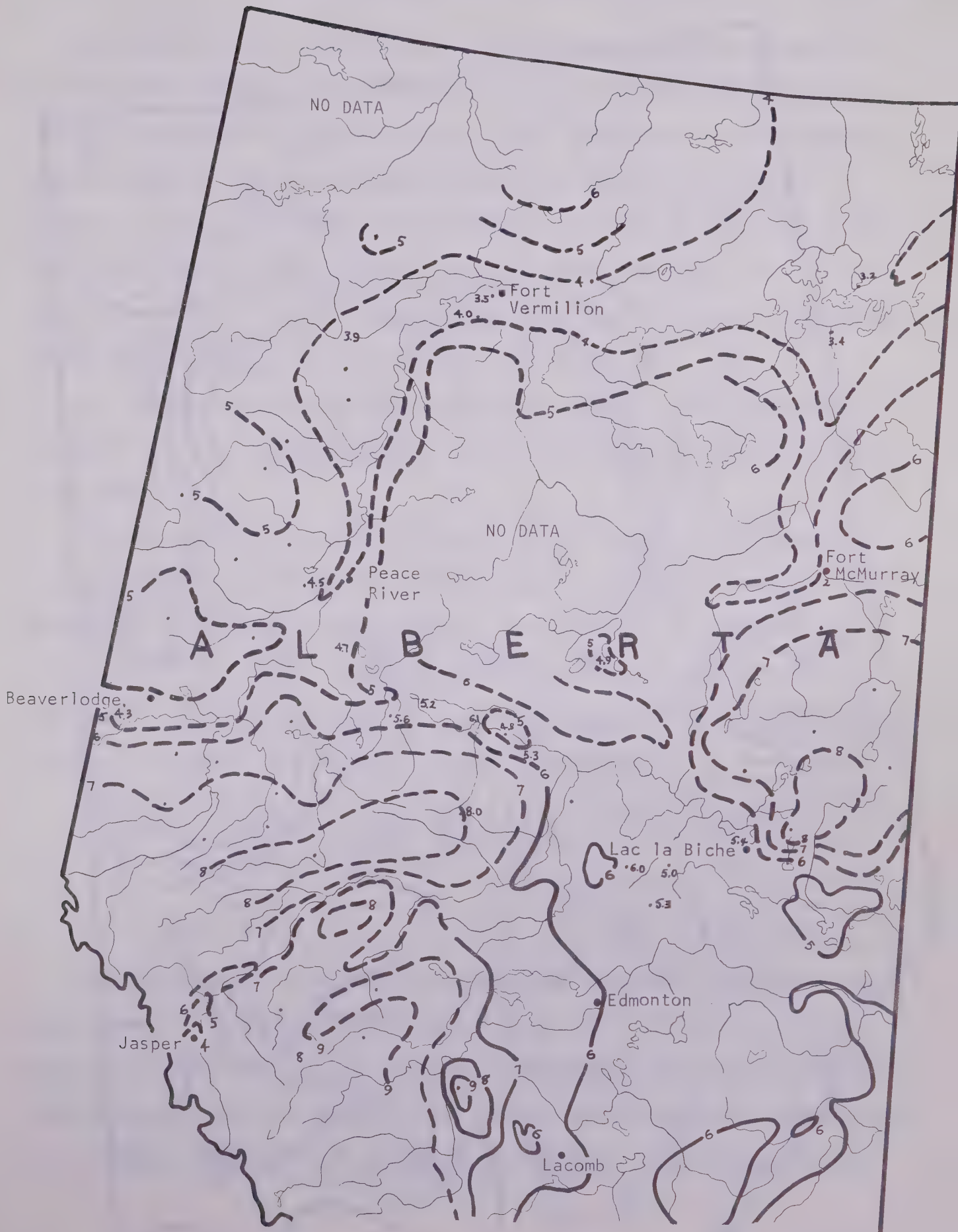
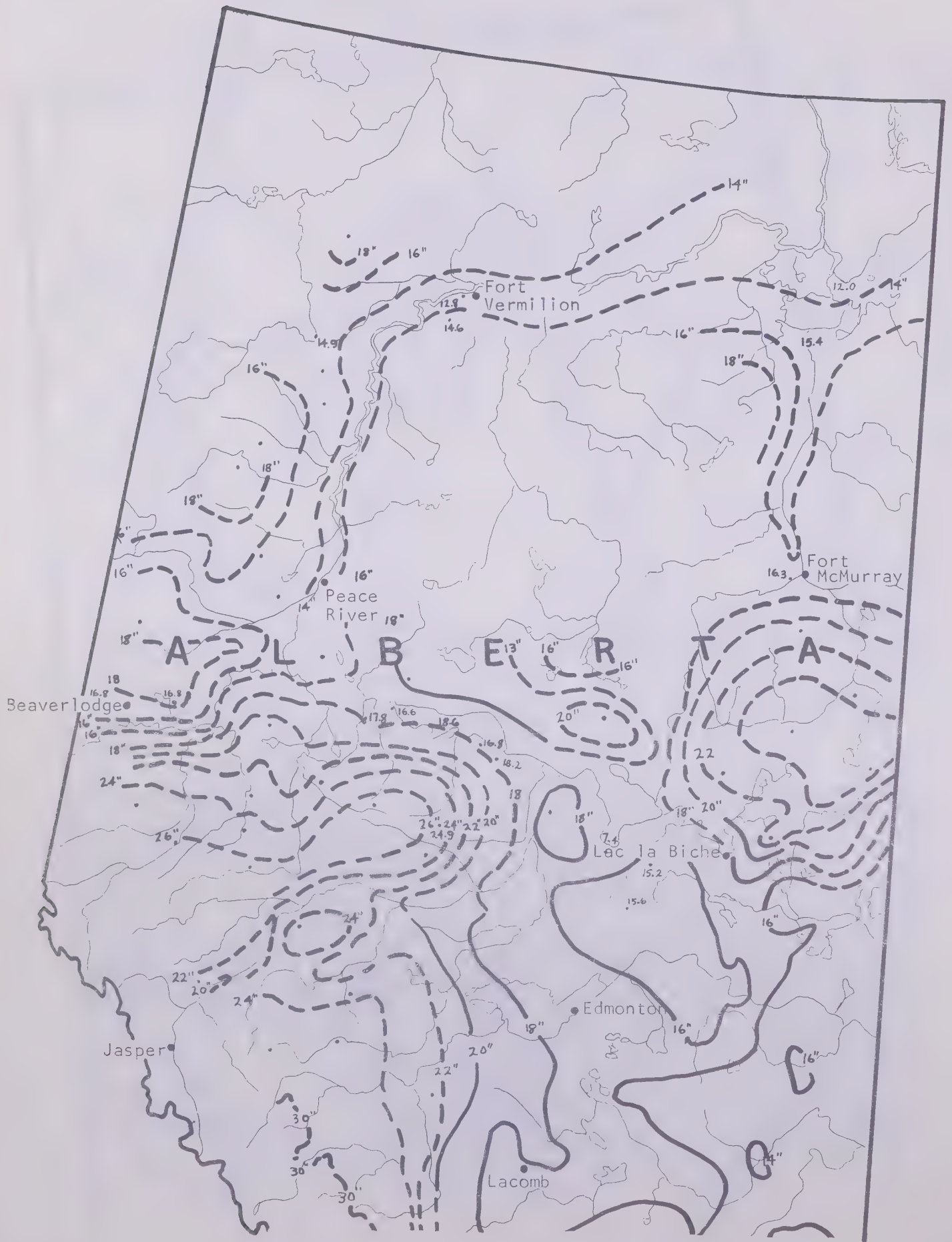


Figure 6

MEAN ANNUAL AMOUNT OF PRECIPITATION INCHES



LAND AND LAND USE IN C.D. 15

Estimates of arable land in C.D. 15 are available from several agencies. For the purpose of this study, the estimates made by the Research Council of Alberta, Exploratory Soil Surveys will be used. Where detailed soil surveys were not available, the acreages used were compiled from the exploratory estimates. Data showing arable and potentially arable as well as other lands, on the basis of soil survey areas, is shown in the attached map. Mr. William Odynsky, Soil Survey Section, Research Council of Alberta, provided information for the areas for which there was no published data.

I.D. boundaries have been superimposed upon the soil survey boundaries in the map of C.D. 15. This permits approximations of potential land development on an I.D. basis.

In 1966, approximately 5 million acres of the land area was in farms in C.D. 15. Of this, approximately 3 million acres were improved or cropped. If markets for agricultural products improve, making farming more profitable in general, then it is likely that the arable and some of the doubtful arable land will be improved. Potentially, 15 to 20 million acres are available for farming in the Peace River Area. A land summary follows:

Total land area.....	59,000,000 acres
Potentially arable and arable.....	16,900,000 acres
Doubtful arable.....	5,600,000 acres
Pasture and woodland.....	35,500,000 acres
Water.....	1,000,000 acres

Land improvement in the Peace River area has increased by 71% in the years 1951 to 1966. The largest tract of land brought under cultivation was in the Hines Creek-Worsley area in I.D. 139, consisting of approximately 170,000 acres; Falher area was next with 144,000 acres; followed by Grande Prairie with 139,000 acres; Blueberry Mountain with 133,000 acres; Manning with 115,000 acres and

Peace River, 99,000 acres.

Although land improvement has been rapid, a considerable amount of the arable land remains to be settled and developed. A summary of arable land and improved land follows:

ARABLE LAND - IMPROVED LAND

Arable land.....	16,900,000
Improved land (to 1966).....	3,000,000
Balance.....	<u>13,900,000</u>

Approximately 14 million acres of arable land may be brought into production in the Peace River Block if further climatic studies warrant this development and when economic conditions vis-a-vis farm prices, installment of community services, development of earlier crop varieties, etc., make land development and farming sufficiently profitable and attractive. In addition, some of the doubtful arable land may be used for farming in the future. There are 5.6 million acres of land in the "doubtful arable" category. The total which, therefore, may eventually be improved is estimated at 15-20 million acres.

Climatic information is too sketchy to determine the limitations it will impose on soil use. When specific areas are considered for development it will be mandatory to appraise closely the climatic factors for the area.

Lands Available for Farming

The government of Alberta has policies regarding land settlement and homesteading. The Public Lands Act designates the basis for disposition of lands. Figure 8 shows the area of C.D. 15 available for farming. The shaded area is all in the "yellow zone". The white area is in the "green zone" and is withdrawn from settlement. Only through petition-

ing of the government can the land in the green zone be redesignated and be made available for farming.

The zones used by the Provincial government are:

1. Yellow - available for all disposition.
2. White - available for all disposition except as a homestead sale.
3. Brown - available for all disposition except that leading to title. (None in C.D. 15)
4. Green - withdrawn from settlement.

Figure 7

C. D. 15 ARABLE SOILS BY SOIL SURVEY AREA^{1/}

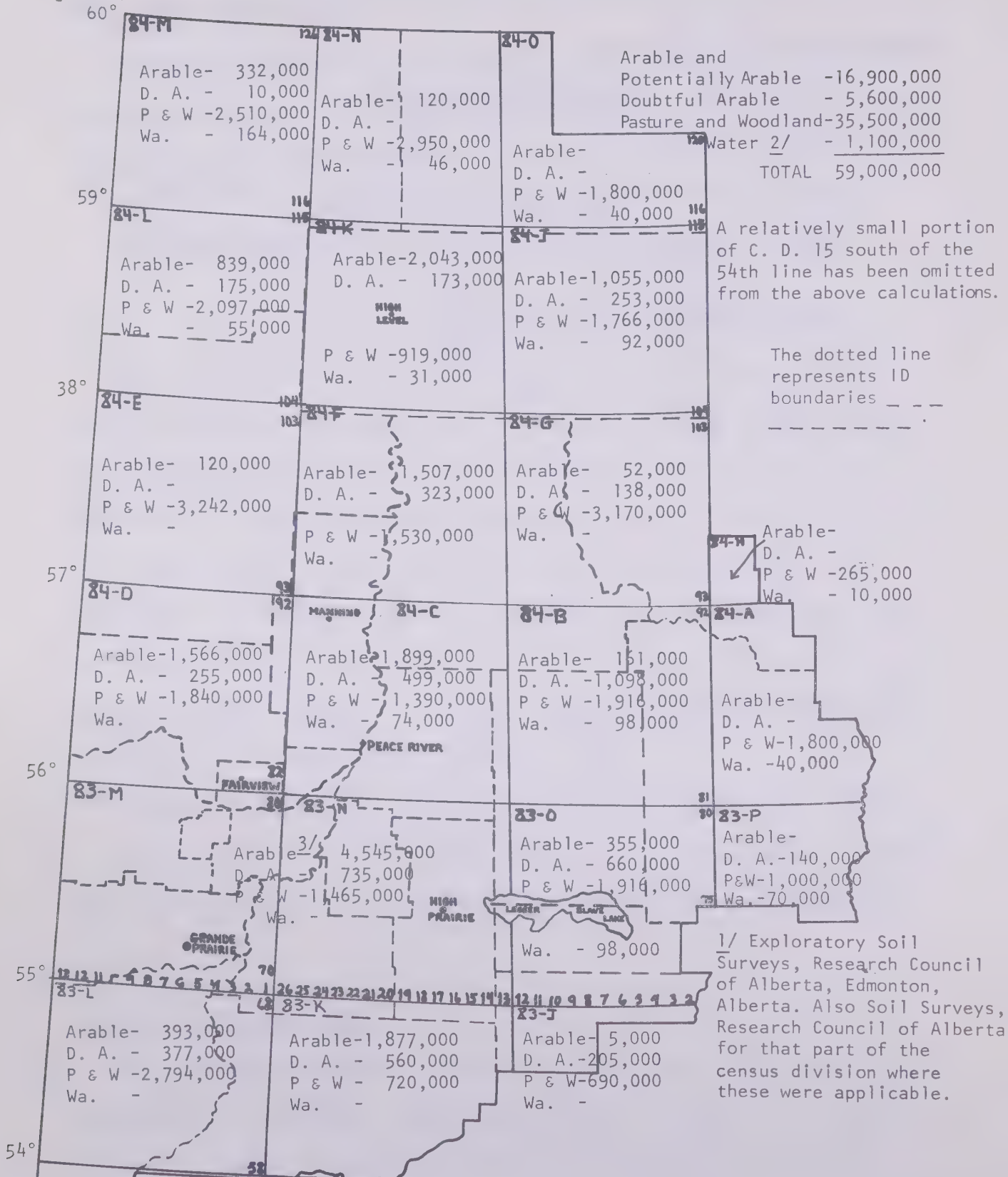


Figure 8

LAND AVAILABLE FOR SETTLEMENT & ARABLE LAND IN C.D. 15

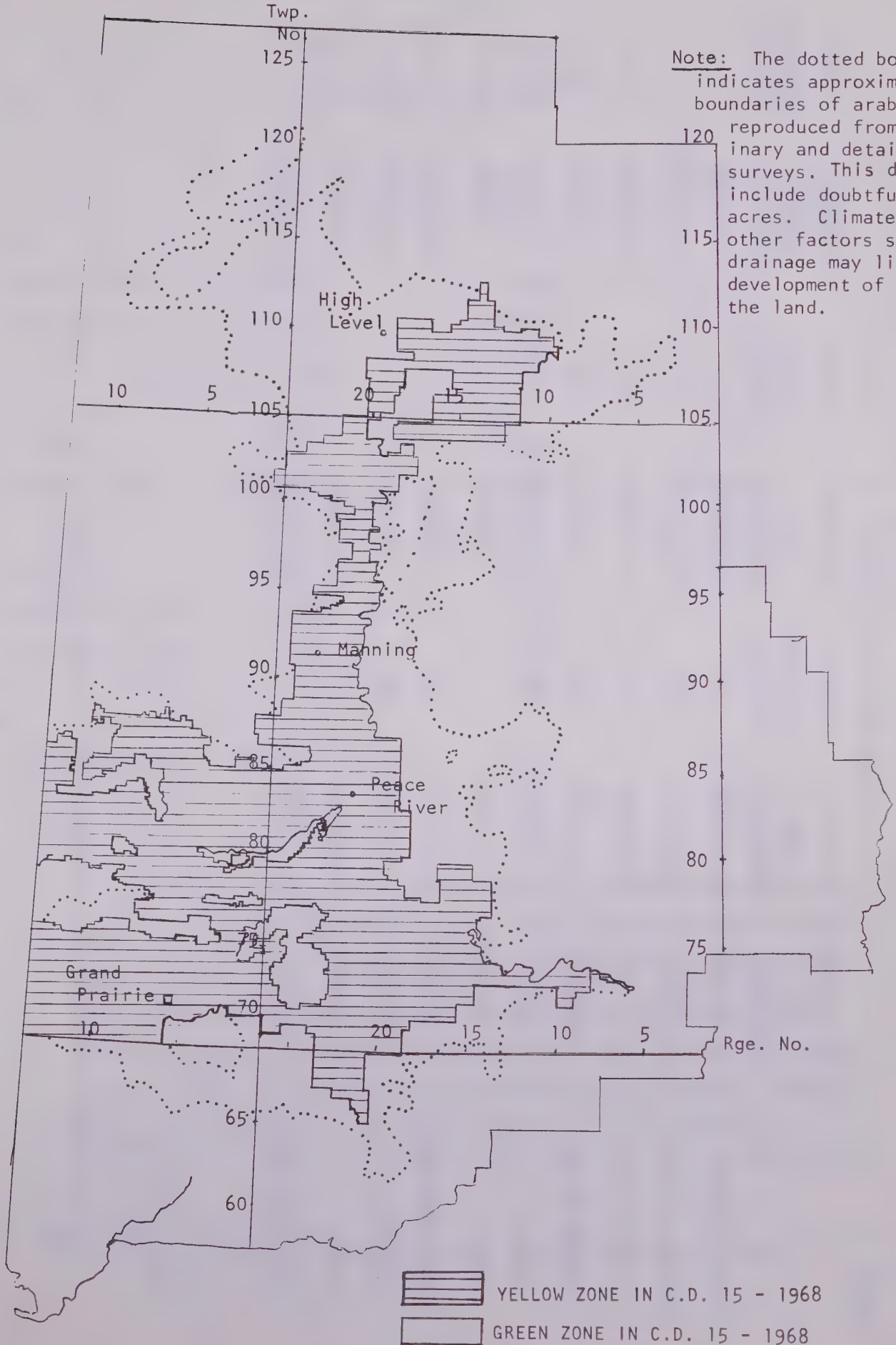


Table 2

LAND USE IN C.D. 15^{1/}

	1951 (Acres)	1956 (Acres)	% Increase 1951-56	1961 (Acres)	% Increase 1951-61	1966 (Acres)	% Increase 1951-66
Area in Farms	3,191,000	3,992,000	25	4,341,000	36	5,050,000	58
Improved Acres	1,774,000	2,228,000	26	2,533,000	43	3,043,000 ^{2/}	71
-Under Crop	1,311,000	1,552,000	18	1,811,000	38	2,271,000	73
-Summerfallow	361,000	535,000	48	556,000	54	571,000	58
-Pasture	46,000	85,000	84	106,000	130	121,000	163
-Other	56,000	56,000	--	60,000	7	80,000	42
Unimproved Acres	1,489,000	1,764,000	18	1,808,000	21	2,007,000	35
-Woodland	451,000	704,000	56	441,000	-2	384,000	-15
-Other	1,038,000	1,060,000	2	1,368,000	32	1,623,000	56
TOTAL LAND AREA	59,318,000	59,318,000		59,318,000		59,318,000	

^{1/} D.B.S.

^{2/} Includes 5,000 acres of improved land on Indian reserves.

FARM DEVELOPMENT IN C.D. 15

Table 3

FARM SIZE AND LAND USE ^{1/}
IN C.D. 15

	<u>1951</u> <u>ac.</u>	<u>% Incr</u> <u>'51-'56</u>	<u>1956</u> <u>ac.</u>	<u>% Incr</u> <u>'51-'61</u>	<u>1961</u> <u>ac.</u>	<u>% Incr</u> <u>'56-66</u>	<u>1966</u> <u>ac.</u>
C.D. 15							59,317,760
Area in farms	3,171,000		3,992,000		4,341,000		5,050,000
Improved land	1,682,000		2,228,000		2,533,000		3,043,000
- under crop	1,249,000		1,552,000		1,811,000		2,271,000
- summer fallowed	336,000		535,000		555,000		571,000
- pasture	44,000		85,000		106,000		121,000
- other	53,000		57,000		60,000		80,000
Unimproved land	1,489,000		1,764,000		1,808,000		2,007,000
- woodland	445,000		704,000		441,000		384,000
- other	1,044,000		1,060,000		1,368,000		1,623,000
No. of farms	8,771		9,563		8,955		8,868
Average farm size	361	16	417	34	485	58	569
Imp. land per farm	192	21	233	47	283	79	343
% of farm improved	53		56		58		60
Alberta							
Average farm size	527	10	579	22	645	34	706
Imp. land per farm	264	13	299	31	345	49	393
% of farm improved	50		52		53		56

The rate of farm size increase in C.D. 15 has been more rapid than in the province at large (58% vs. 34% in the 15-year period from 1951-1966). The average farm size is still 137 acres smaller than that for Alberta and there are 50 improved acres less in each farm in C.D. 15 when compared with Alberta farms even though C.D. 15 farmland is 60% improved compared to 56% in the province. The rate of land improvement was much faster in the Peace River block than in the province (79% from 1951 to 1966 compared to 49% respectively). Since farm size in C.D. 15 lags by 137 acres, it is important to increase farm size as well as farm

^{1/} Acreages may not equal totals due to rounding of numbers.
(D.B.S.)

production efficiencies in order to bring the economic viability to the provincial average. Soil quality is also a factor in farm productivity. Crop yields in C.D. 15 have been slightly lower than they are in the province making the need for an increase in farm size to achieve greater economic viability even more urgent. (See Table 35, "Crop Yields".)

Table 4

LAND USE BY SUBDIVISION
(acres)

	<u>1951</u>	<u>Total farms</u>	<u>1956</u>	<u>1961</u>	<u>1966</u>	<u>% Change 1951-66</u>
I.D. 110 - Area in farms	NA	NA	1,816	4,821	18,969	
(Little Improved			316	2,197	4,843	4,843 ac.
Smoky - - under crop			140	1,231	2,968	large per-
Fox Creek) - s. fallowed			135	90	790	centage
- pasture			8	120	284	increase
Unimproved			1,500	2,624	14,126	
- woodland			1,350	494	506	
I.D. 111 - Area in farms	NA	NA	19,167	21,150	23,245	
Improved			5,399	7,540	10,702	10,702 ac.
(Grovedale- - under crop			4,339	6,174	7,527	large per-
Grande - s. fallowed			460	400	1,415	centage
Cache) - pasture			431	400	589	increase
Unimproved			13,768	13,610	12,543	
- woodland			1,533	1,892	1,911	
I.D. 123 - Area in farms	--	--	No	No	No	
(Swan Hills)			farms	farms	farms	
I.D. 124 - Area in farms	50,192	279	55,638	49,492	52,668	
(Slave Improved	14,991		19,244	20,743	25,327	+ 10,336 ac.
Lake - - under crop	12,159		13,105	14,904	14,606	69%
Kinuso) - s. fallowed	1,032		2,418	2,631	5,696	
- pasture	778		1,389	1,859	2,628	
Unimproved	35,201		36,394	28,749	27,341	
- woodland	13,480		18,672	15,058	5,912	

Table 4 (Cont'd.)		1951	Total Farms	1956	1961	1966	% Change 1951-66
I.D. 125 - Area in farms		103,752	315	203,022	200,862	229,051	
(High Improved		43,967		88,234	104,146	126,747	+82,780 ac. 188%
Prairie) - under crop		36,038		67,006	76,380	94,209	
- s. fallowed		2,487		11,868	16,375	20,433	
- pasture		2,811		6,314	4,567	7,894	
Unimproved		48,885		114,788	100,716	102,304	
- woodland		24,298		52,435	9,923	35,653	
I.D. 126 - Area in farms		146,838	484	156,249	201,123	254,386	
(Valley- Improved		55,519		58,556	83,378	114,769	59,250 ac. 107%
View) - under crop		45,661		45,962	66,074	86,022	
- s. fallowed		5,177		8,191	9,437	15,106	
- pasture		834		2,550	4,305	7,102	
Unimproved		91,319		97,693	117,745	139,617	
- woodland		14,461		56,091	42,679	30,430	
I.D. 128 & I.D. 129 - Area in farms		none		1,216	1,791	3,430	
(Wabasca - Improved				397	726	1,696	large percentage increase
Utikuma - under crop				98	669	851	
Lake) - s. fallowed				35	26	65	
- pasture				252	31	700	
Unimproved				819	1,065	1,734	
- woodland				35	600	1,200	
M.D. 130 - Area in farms		365,253	1,001	377,676	442,347	496,961	
(Falher) Improved		216,819		248,894	303,639	361,265	144,446 ac. 67%
- under crop		163,573		177,026	221,889	298,400	
- s. fallowed		43,643		62,126	70,536	52,539	
- pasture		4,837		5,976	6,721	5,385	
Unimproved		148,424		128,782	138,708	135,696	
- woodland		42,127		82,622	49,914	51,136	
I.D. 131 - Area in farms		150,021	391	201,849	218,422	241,825	
(Cadotte Improved		57,873		98,206	125,517	156,445	98,572 ac. 170%
Lake) - under crop		42,589		62,599	80,875	116,152	
- s. fallowed		11,952		29,672	36,454	31,374	
- pasture		1,507		3,226	4,371	6,259	
Unimproved		89,148		103,643	92,905	85,380	
- woodland		11,722		64,702	47,122	19,592	

Table 4 (Cont'd.)		1951	Total Farms	1956	1961	1966	% Change 1951-66
I.D. 132 - Area in farms		256,600	690	332,685	367,374	409,808	
(Wanham)	Improved	134,919		197,511	218,821	257,179	122,260 ac. 90%
	- under crop	94,671		137,386	164,693	206,178	
	- s. fallowed	22,679		50,170	39,286	41,874	
	- pasture	3,584		5,103	10,346	4,986	
	Unimproved	120,681		135,174	148,553	152,629	
	- woodland	44,625		80,667	25,275	34,199	
M.D. 133 - Area in farms		146,970	383	156,905	168,062	177,494	
(Spirit	Improved	87,266		99,345	106,800	127,088	39,822 ac. 46%
River)	- under crop	64,340		68,147	75,935	90,647	
	- s. fallowed	18,017		26,112	25,532	30,844	
	- pasture	2,269		2,820	3,249	3,342	
	Unimproved	59,704		57,560	61,262	50,406	
	- woodland	19,954		26,761	8,902	10,469	
I.D. 134 - Area in farms		246,074	796	285,674	317,727	464,611	
(Blue-	Improved	127,317		151,487	177,644	260,764	133,447 ac. 105%
berry	- under crop	97,031		100,701	127,371	188,235	
Mountain)	- s. fallowed	30,320		42,124	40,267	59,561	
	- pasture	2,796		4,856	5,883	6,567	
	Unimproved	126,783		134,187	140,083	203,847	
	- woodland	52,247		47,035	48,080	22,850	
M.D. 135 - Area in farms		178,919	411	182,449	201,339	219,051	
(Grimshaw)	Improved	114,677		119,594	132,350	144,691	30,014 ac. 26%
	- under crop	83,515		81,953	88,399	101,346	
	- s. fallowed	26,063		30,530	35,054	31,040	
	- pasture	2,895		4,703	5,876	9,594	
	Unimproved	64,242		62,855	68,989	74,360	
	- woodland	21,220		4,406	7,908	6,721	

NOTE: 1951 figures exclude Indian reserves, whereas 1956, 1961, and 1966 values include land farmed on Indian reserves.

Table 4 (Cont'd.)		1951	Total Farms	1956	1961	1966	% Change 1951-66
M.D. 136 - Area in farms		218,380	447	227,285	237,478	248,498	
(Fairview) Improved		141,421		153,212	162,478	174,005	32,584 18%
- under crop		100,166		109,216	115,162	131,264	
- s. fallowed		31,947		37,140	38,908	32,018	
- pasture		4,629		4,751	5,990	5,631	
Unimproved		76,959		74,073	75,000	74,493	
- woodland		5,918		18,998	13,352	7,944	
I.D. 138 ^{1/} - Area in farms				377,687	418,090	479,307	
(Manning) Improved				210,650	242,841	282,438	114,991 ac. 276%
- under crop				141,840	160,043	207,446	
- s. fallowed	(See aggre-			56,774	66,705	57,550	
- pasture	gate figures under C.D. 15)			5,811	9,963	10,456	
Unimproved				167,037	175,249	196,869	
- woodland				61,408	32,720	58,444	
I.D. 139 - Area in farms		255,602	682	344,788	394,240	549,656	
(Hines Creek) Improved		97,697		147,243	184,896	267,351	169,654 ac. 173%
- under crop		73,379		107,264	138,107	204,266	
- s. fallowed		17,615		32,166	35,974	44,411	
- pasture		1,583		3,372	5,983	9,236	
Unimproved		158,895		197,546	209,344	282,305	
- woodland		51,011		30,825	23,253	15,872	
I.D. 144 - Area in farms							
(Burnt Lakes Area			NO FARMS				
Chipewyan)							
I.D. 145 - Area in farms				1,484	3,563	1,112	
(Bison Lake) Improved				974	1,898	912	912 ac.
- under crop				752	1,738	785	
- s. fallowed				145	84	120	
- pasture				10	45	-	
Unimproved				510	1,665	200	
- woodland				440	859	-	

1/ There is a discrepancy in D.B.S. figures reported for I.D. 138 and T47 for 1951. These figures are valid when added for the 2 I.D.'s but not when considered separately.

Table 4 (Cont'd.)		1951	Total Farms	1956	1961	1966	% Change 1951-66
I.D. 146 - Area in farms				16,425	25,848	28,026	
(Keg River)	Improved			6,631	13,075	15,642	15,642 ac.
	- under crop			5,250	10,307	11,872	large per-
	- s. fallowed			800	2,297	2,523	centage
	- pasture			300	426	929	increase
	Unimproved			9,794	12,773	12,384	
	- woodland			6,454	9,948	9,355	
I.D. 147 - Area in farms				99,957	105,811	112,523	
(Ft. Vermilion)	Improved			43,252	43,234	53,923	53,923 ac.
	- under crop			29,068	33,669	41,127	25%
	- s. fallowed	(See aggregate figures under C.D. 15.)		2,948	6,577	8,487	
	- pasture			8,710	2,341	3,144	
	- other						
	Unimproved			56,705	62,577	58,600	
	- woodland			29,786	18,479	19,992	
	- other						
County #1 - Area in farms		871,777	2,187	939,145	952,340	1,033,674	
(Grande Prairie)	Improved	513,983		573,390	600,855	652,634	138,651 ac.
	- under crop	379,392		396,552	424,634	464,574	27%
	- s. fallowed	109,636		139,777	128,123	133,874	
	- pasture	13,179		23,659	33,326	35,107	
	Unimproved	357,590		365,755	351,485	381,040	
	- woodland	120,844		116,880	83,151	51,329	
C.D. 15 ^{1/} - Area in farms		3,171,000		3,992,223	4,341,245	5,050,068	
	Improved	1,681,554		2,227,964	2,533,061	3,042,984	
	- under crop	1,248,690		1,551,785	1,811,406	2,270,581	
	- s. fallowed	335,830		534,684	555,494	570,806	
	- pasture	43,544		84,845	106,068	121,171	
	- other*	53,490		56,650	60,093	80,426	
	(by subtn)						

^{1/} Includes data for I.D. 138 and 147 which are valid in the aggregate.

Table 4 (Cont'd.)	<u>1951</u>	<u>Total Farms</u>	<u>1956</u>	<u>1961</u>	<u>1966</u>	<u>% Change 1951-66</u>
C.D. 15 - Unimproved	1,489,446		1,764,259	1,808,184	2,007,084	
(Cont'd.) - woodland	445,073		704,342	440,599	383,615	
- other	1,044,373		1,059,917	1,367,585	1,623,469	
TOTAL LAND AREA					59,317,760	

* Improved land minus use above.

Table 5

TOTAL AND IMPROVED ACREAGE
BY MUNICIPAL SUB-DIVISION

<u>Location</u>	<u>Total Acreage^{1/}</u>	<u>Acreage in Farms^{2/}</u>	<u>Improved Acres^{2/} 1966</u>	<u>% of Total Acreage Improved</u>	<u>% of Acreage in Farms Improved</u>
I.D. 110 (Little Smoky - Fox Creek)	3,580,720	18,969	4,843	0.1	-
I.D. 111 (Grovedale - Grande Cache)	3,006,720	23,245	10,720	0.3	-
I.D. 123 (Swan Hills)	1,244,160	-	-	-	-
I.D. 124 (Slave Lake - Kinuso)	817,529	52,668	25,327	3.1	48.1
I.D. 125 (High Prairie)	1,464,598	229,051	126,747	8.6	55.0
I.D. 126 (Valleyview)	1,474,434	254,386	114,769	8.0	45.0
I.D. 128 (Wabasca)	4,458,240	-	-	-	-
I.D. 129 (Utikuma Lake)	2,833,920	3,430	1,696	0.07	49.0
M.D. 130 (Falher)	710,393	496,961	361,265	50.8	73.0
I.D. 131 (Cadotte Lake)	1,636,809	241,825	156,445	9.5	65.0
I.D. 132 (Wanham)	728,206	409,808	257,179	35.3	63.0
M.D. 133 (Spirit River)	185,487	177,494	127,088	68.5	72.0
I.D. 134 (Blueberry Mountain)	1,527,642	464,611	260,764	17.1	56.0
M.D. 135 (Grimshaw)	232,546	219,051	144,691	62.2	66.0
M.D. 136 (Fairview)	260,873	248,498	174,005	66.7	70.0
I.D. 138 (Manning)	1,875,726	479,307	282,438	15.0	59.0
I.D. 139 (Hines Creek)	1,865,400	549,656	267,351	14.0	49.0
I.D. 144 (Burnt Lakes area - Chipewyan)	2,706,240	-	-	-	-
I.D. 145 (Bison Lake)	4,237,440	1,112	912	-	-
I.D. 146 (Keg River)	5,991,040	28,026	15,642	0.3	-
I.D. 147 (Ft. Vermilion)	5,876,057	112,523	53,923	0.9	-
I.D. 148 (Meander River)	4,974,720	-	-	0	-
I.D. 149 (Rainbow Lake)	6,447,360	-	-	0	-
County #1 (Grande Prairie)	1,406,844	1,033,674	652,634	46.4	63.0
TOTAL	59,539,799	5,050,068	3,043,000		

^{1/} Alberta Department of Municipal Affairs; Annual Report, Edmonton, 1966.

^{2/} D.B.S.

Table 6 LOCATION OF LAND IMPROVEMENT ^{1/}

	Total Improved Acres 1966	Acreage Improved 1951-66	% Change 1951-66	% of Farmland Improved as of 1966
I. D. 110 (Little Smoky - Fox Creek)	4,843	4,843	Large	26
I. D. 111 (Grovedale-Grande Cache)	10,702	10,702	Large	46
I. D. 123 (Swan Hills)	--	--	--	--
I. D. 124 (Slave Lake-Kinuso)	25,327	10,336	69	48
I. D. 125 (High Prairie)	126,747	82,780*	188	55
I. D. 126 (Valleyview)	114,769	59,250*	107	45
I. D. 128 (Wabasca)	--	(With I.D. 129) (Figure)	--	--
I. D. 129 (Utikama Lake)	1,696	1,696	Large	49
I. D. 130 (Falher)	361,265	144,446**	67	73
I. D. 131 (Cadotte Lake)	156,445	98,572*	170	65
I. D. 132 (Wanham)	257,179	122,260**	90	63
I. D. 133 (Spirit River)	127,088	39,822	46	72
I. D. 134 (Blueberry Mountain)	260,764	133,447**	105	56
I. D. 135 (Grimshaw)	144,691	30,014	26	66
I. D. 136 (Fairview)	174,005	32,584	18	70
I. D. 138 (Manning)	282,438	114,991**	69	59
I. D. 139 (Hines Creek)	267,351	169,654**	173	49
I. D. 144 (Burnt Lakes Area-Chipewyan)	--	--	--	--
I. D. 145 (Bison Lake)	912	912	--	--
I. D. 146 (Keg River)	15,642	15,642	Large	56
I. D. 147 (Ft. Vermilion)	53,923 ^{3/}	53,923*	Large	48
County #1 (Grande Prairie)	652,634	138,651**	27	63
Total Change		1,265,000 ^{1/}		

* Improved 50,000 acres or more in the 15-year period 1951-66.

** Improved 100,000 acres or more in the 15-year period 1951-66.

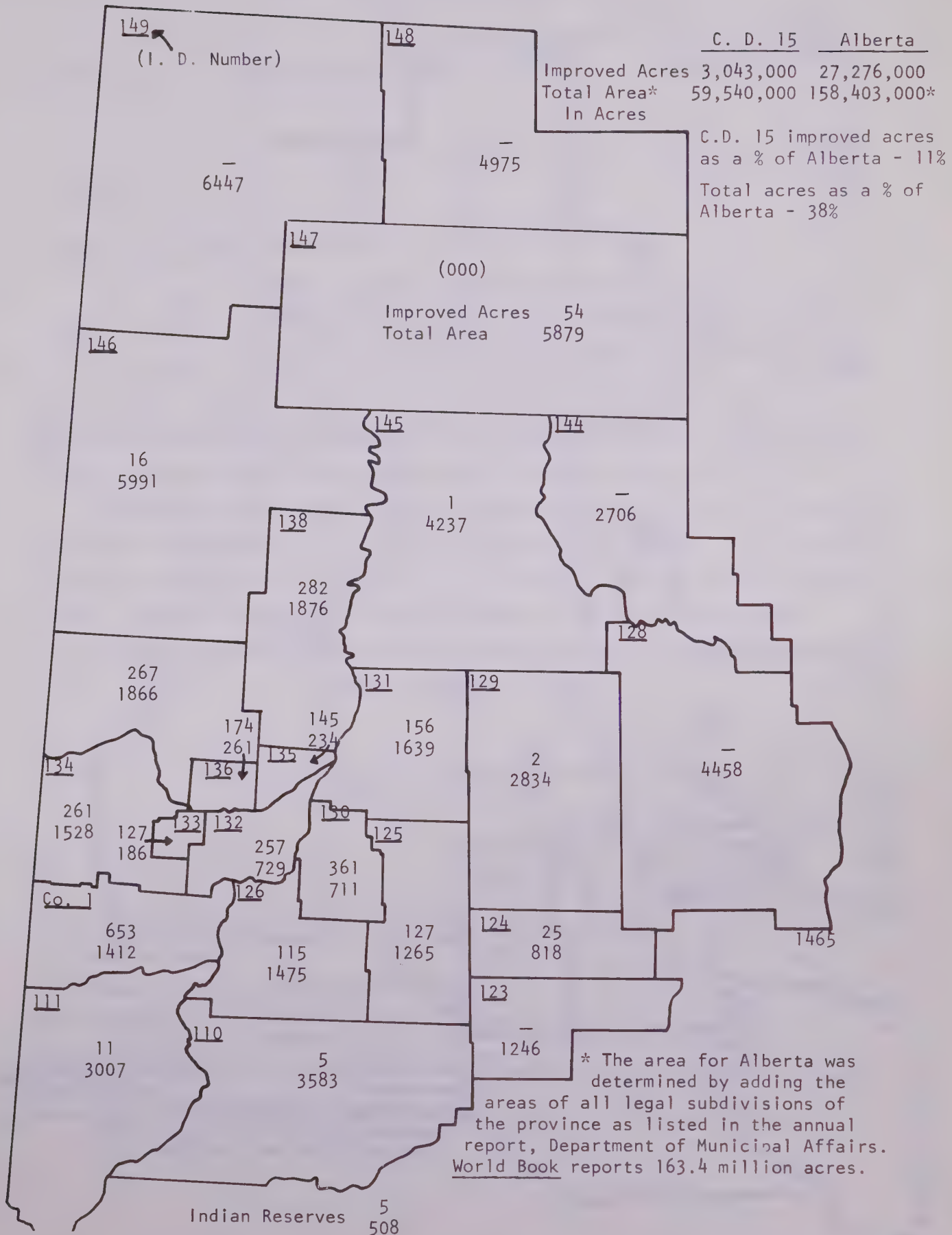
^{1/} Excludes approximately 5,000 acres of improved land on Indian reservations.

^{2/} Names used are for identifying general location of the improvement district. These are not official names except in those municipalities where official names have been ascribed.

^{3/} Data prior to 1956 is not available for I. D. 147. It is likely that some of the 54,000 acres were (shown here) improved prior to 1956.

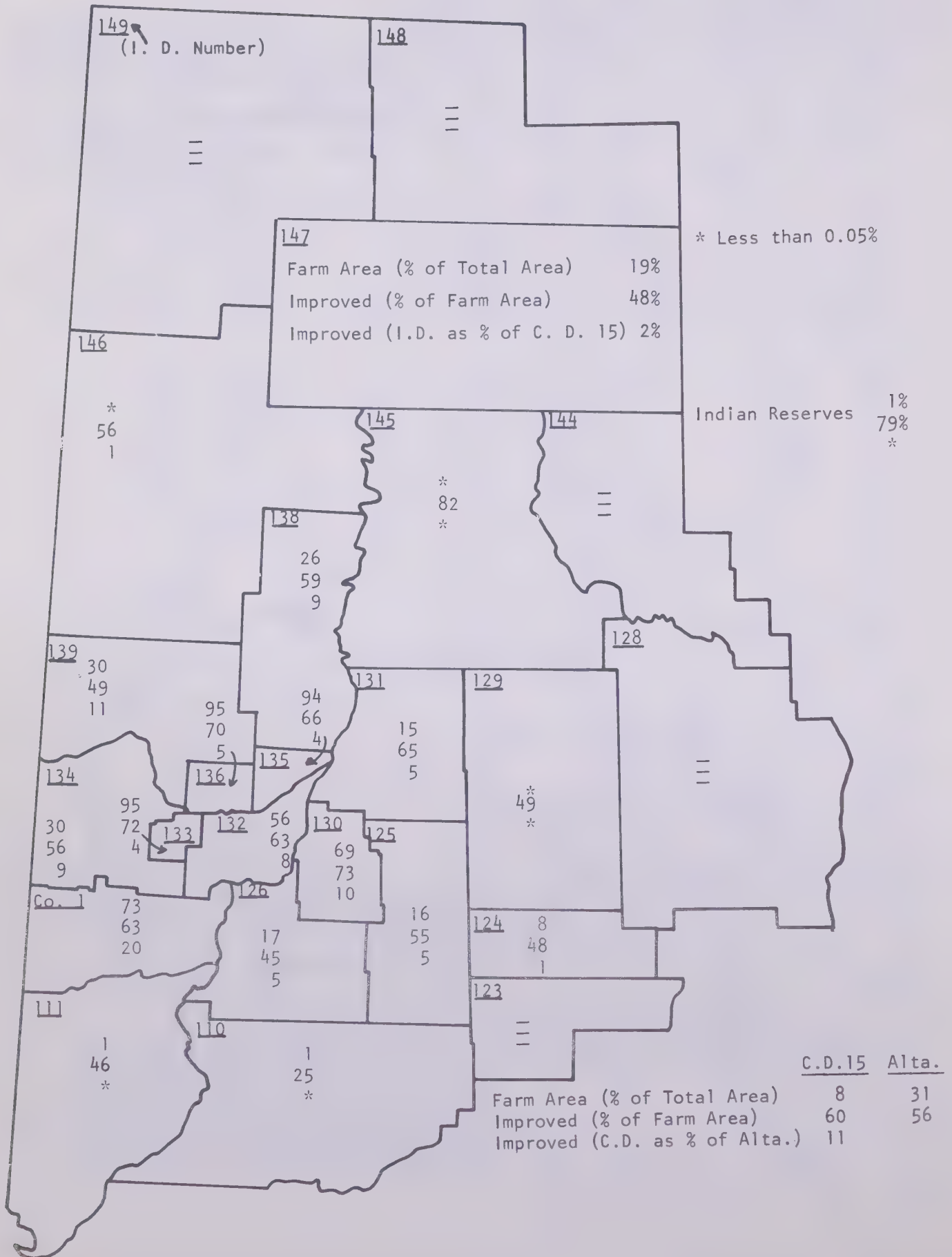
IMPROVED ACRES
TOTAL AREA IN ACRES

Figure 9



TOTAL AREA AND FARM LAND
FOR C. D. 15 - SUBDIVISIONS - 1966

Figure 10



FARMS AND FARM POPULATION;
C.D. 15

Table 7 POPULATION PER FARM - C.D. 15

	<u>1951</u>	<u>1956</u>	<u>1961</u>	<u>1966</u>	<u>15 Year Average</u>
Ratio: C.D. 15	3.6	3.7	3.6	3.9	3.7
Alberta	4.1	4.2	3.9	4.1	4.1

The number of farms and the population in C.D. 15 reached a peak in 1956. During the 10 year period 1956-1966 both farm numbers and population on farms declined as farms were consolidated to achieve more viable farm units. When an area loses a farm it also loses an average of 3.7 people if the family moves out of the region. Alberta's population per farm is approximately 10% greater than it is for C.D. 15.

Improvement districts 131, 134, 138 and 139 added farms; a total of 655 new farms. The four I.D.'s also gained 1,702 people. I.D. 128 and 129 are shown jointly, in Table 8, to conceal identity because of the small number of farms involved. For data in the following table, see Table 9, "Number of Farms, and Farm Population by Subdivisions."

Table 8 IMPROVEMENT DISTRICTS SHOWING GROWTH
IN FARM NUMBERS IN 1951-1966

<u>Improvement District</u>	<u>Additional Farms</u>	<u>Change in Population</u>
128 & 129 (Wabasca)	8	26
131 (Cadotte Lake)	33	421
134 (Blueberry Mtn.)	76	-70
138 (Manning)	350	910
139 (Hines Creek)	196	441
Total change	663	1728

If the above growth area is excluded, the balance of C.D. 15 lost 566 farms and 741 people. The farm people may have migrated internally, within C.D. 15 to other occupations or they may have left the region. The region, however, witnessed a net total population gain of 26,500 during this period 1951-66 as reported in the "Population" section of this report.

Although land in farms increased by 25 per cent in the five-year period from 1951 to 1956, it increased only another 33 per cent from 1956 to 1966, which is a 10-year period.

Although the rate of increase of farm land fluctuated, the rate of improving land stayed fairly uniform for the 15 year period, showing a 71 per cent rise in improved land acreage or approximately a 24 per cent increase for each five-year period. This means approximately 126,000 acres of new land came into production every year.

Summerfallow acreage rose by only 10 per cent in the last 10-year period or 1 per cent per year. However, summerfallow as a per cent of improved acreage stayed relatively constant. The figures follow:

	<u>1951</u>	<u>1956</u>	<u>1961</u>	<u>1966</u>
Summerfallow as a % of Improved Acreage	20	24	22	19

Pasturing on improved land rose by 84 per cent in the 5-year period 1951 to 1956 and another 79 per cent in the next 10-year period indicating decelerated growth, in the last 10 years.

Since more land was brought into farms, (58 per cent increase in 15 years) the total acreage of unimproved land in farms increased but the relative proportion of the acreage in farms decreased as follows:

% of Farm Acreage	<u>1951</u>	<u>1956</u>	<u>1961</u>	<u>1966</u>
- Unimproved	47	44	42	40
- Improved	53	56	58	60

Figure 11

AVERAGE SIZE OF CENSUS FARMS
AVERAGE SIZE OF COMMERCIAL FARMS^{1/}
1966

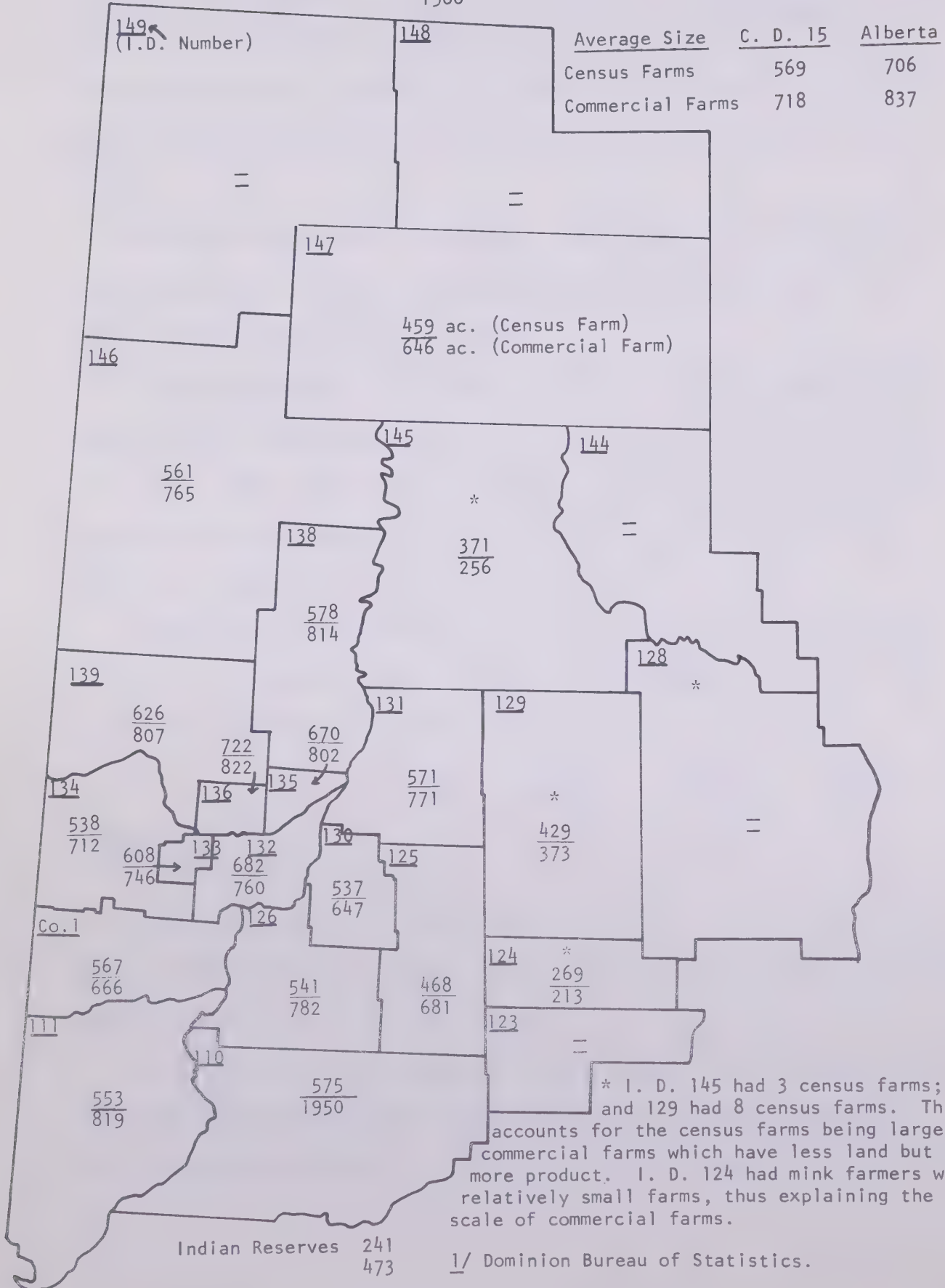


Table 9

NUMBER OF FARMS AND FARM POPULATION BY SUBDIVISION

	1951		1956		1961		1966	
	No. Farms	Farm Pop.	No. Farms	Farm Pop.	No. Farms	Farm Pop.	No. Farms	Farm Pop.
I.D. 110	-	-	8	40	12	56	33	168
I.D. 111	-	-	51	180	47	179	42	159
I.D. 123	-	-	-	-	-	-	-	-
I.D. 124	279	1,085	259	823	210	966	196	997
I.D. 125	514	2,032	590	2,250	480	1,746	489	2,024
I.D. 126	484	1,661	403	1,864	448	1,755	470	2,258
I.D. 128	-	-	2	7	<u>1</u> /	<u>1</u> /	<u>1</u> /	<u>1</u> /
I.D. 129	-	-	*	*	5	11	8	26
M.D. 130	1,000	3,709	920	3,809	894	3,589	925	3,383
I.D. 131	391	1,344	457	1,662	447	1,596	424	1,765
I.D. 132	690	2,462	731	2,462	665	2,010	601	2,106
M.D. 133	383	1,284	375	1,296	317	1,081	292	1,040
I.D. 134	788	2,593	750	2,388	732	2,110	864	2,523
M.D. 135	411	1,421	369	1,300	349	1,196	327	1,217
M.D. 136	447	1,721	434	1,557	399	1,346	344	1,367
I.D. 138	479	1,648	872	3,003	849	2,701	829	2,558
I.D. 139	682	2,450	770	2,525	731	2,386	878	2,891
I.D. 144	-	-	-	-	-	-	-	-
I.D. 145	-	-	4	11	7	31	3	7
I.D. 146	-	-	52	183	63	268	50	294
I.D. 147	NA	NA	274	1,594	280	1,648	245	1,940
I.D. 148	-	-	-	-	-	-	-	-
I.D. 149	-	-	-	-	-	-	-	-
County #1	2,187	7,993	2,192	7,911	1,984	7,166	1,824	7,236
Indian Res.	36	410	50	282	36	257	24	223
TOTAL	8,771	31,813	9,563	35,147	8,955	32,098	8,868	34,182

* One farm in I.D. 129 is included in I.D. 128.

NA - Not Available

1/ Two farms in I.D. 128 are included in I.D. 129.

Table 10 FARM SIZE IN C.D. 15^{1/}

	<u>1956</u>	<u>1961</u>	<u>1966</u>
Less than 3 ac.	33	27	27
3 - 9	56	47	57
10 - 69	87	94	104
70 - 239	2147	1555	1162
240 - 399	3502	2931	2474
400 - 559	1713	1671	1627
560 - 759	1021	1222	1454
760 - 1119	705	937	1223
1120 - 1599	219	335	503
1600 - 2239	55	89	148
2240 - 2879	16	23	42
over 2880 ac.	9	24	47
Av. Size of farm	417	455	570
Av. Improved ac. per farm	233	283	343
TOTAL	9563	8955	8868

^{1/} Tabulated from D.B.S. data.

Table 11 FARM SIZE BY SUBDIVISION^{1/}

	<u>Farm Size</u>	<u>1956</u>	<u>1961</u>	<u>1966</u>	<u>Electric Power 1966</u>
I.D. 110	3 ac.	-	-	-	
(Fox Creek)	3 - 9	-	-	-	
	10 - 69	-	-	-	
	70 - 239	4	-	1	
	240 - 399	4	8	15	
	400 - 559	-	2	3	
	560 - 759	-	2	5	
	760 - 1119	-	-	7	
	1120 - 1599	-	-	2	
	1600 - 2239	-	-	-	
	2240 - 2879	-	-	-	
	2880	-	-	-	
	TOTAL	8	12	33	27
I.D. 111	3 ac.	-	-	-	
(Grovedale -	3 - 9	-	-	-	
Grande Cache)	10 - 69	-	-	-	
	70 - 239	17	10	7	
	240 - 399	17	19	10	
	400 - 559	6	5	7	
	560 - 759	7	2	6	
	760 - 1119	3	9	9	
	1120 - 1599	1	2	3	
	1600 - 2239	-	-	-	
	2240 - 2879	-	-	-	
	2880	-	-	-	
	TOTAL	51	47	42	26

^{1/} Tabulated from D.B.S. data.

Table 11 (Cont'd.)

		<u>1956</u>	<u>1961</u>	<u>1966</u>	<u>Electric Power 1966</u>
<u>Farm Size</u>					
I.D. 123 - No Farms (1966-61-56)					
(Swan Hills)					
I.D. 124	3 ac.	33	19	18	
(Slave Lake -	3 - 9	29	38	35	
Kinuso)	10 - 69	25	28	25	
	70 - 239	86	46	37	
	240 - 399	49	42	28	
	400 - 559	21	15	23	
	560 - 759	9	7	14	
	760 - 1119	3	10	11	
	1120 - 1599	2	3	3	
	1600 - 2239	-	1	2	
	2240 - 2879	1	1	-	
	2880	1	-	-	
TOTAL		259	210	196	157
I.D. 125	3 ac.	-	2	1	
(High Prairie)	3 - 9	4	1	-	
	10 - 69	2	2	1	
	70 - 239	233	125	113	
	240 - 399	213	171	155	
	400 - 559	68	86	89	
	560 - 759	31	36	52	
	760 - 1119	24	36	48	
	1120 - 1599	6	15	22	
	1600 - 2239	7	5	6	
	2240 - 2879	2	-	1	
	2880	1	1	1	
TOTAL		590	480	489	293

Table 11 (Cont'd.)

	<u>Farm Size</u>	<u>1956</u>	<u>1961</u>	<u>1966</u>	<u>Electric Power 1966</u>
I.D. 126					
(Valleyview)	3 ac.	-	1	-	
	3 - 9	-	-	-	
	10 - 69	3	6	12	
	70 - 239	103	94	55	
	240 - 399	175	179	144	
	400 - 559	59	73	82	
	560 - 759	25	40	103	
	760 - 1119	25	36	44	
	1120 - 1599	10	13	19	
	1600 - 2239	2	4	6	
	2240 - 2879	-	-	1	
	2880	1	2	4	
	TOTAL	403	448	470	317

I.D. 128 - 2 farms in 1966 are reported with 129.

No farms in 1961 - One farm in each I.D. in 1956.

I.D. 128 &	3 ac.	-	-	-	
129	3 - 9	-	-	-	
(Wabasca)	10 - 69	-	-	1	
	70 - 239	-	2	3	
	240 - 399	1	1	1	
	400 - 559	-	1	2	
	560 - 759	-	-	-	
	760 - 1119	1	1	-	
	1120 - 1599	-	-	-	
	1600 - 2239	-	-	1	
	2240 - 2879	-	-	-	
	2880	-	-	-	
	TOTAL	2	5	8	1

Table 11 (Cont'd.)

	<u>Farm Size</u>	<u>1956</u>	<u>1961</u>	<u>1966</u>	<u>Electric Power 1966</u>
M.D. 130 (Falher)	3 ac.	-	-	3	
	3 - 9	3	1	1	
	10 - 69	6	7	4	
	70 - 239	197	149	127	
	240 - 399	358	154	288	
	400 - 559	186	154	168	
	560 - 759	81	116	154	
	760 - 1119	60	86	105	
	1120 - 1599	26	49	58	
	1600 - 2239	3	10	11	
	2240 - 2879	-	1	2	
	2880	-	1	4	
	<u>TOTAL</u>	<u>920</u>	<u>894</u>	<u>925</u>	<u>600</u>
I.D. 131 (Cadotte Lake)	3 ac.	-	1	-	
	3 - 9	-	-	3	
	10 - 69	2	7	7	
	70 - 239	98	78	44	
	240 - 399	175	141	124	
	400 - 559	85	89	76	
	560 - 759	42	63	58	
	700 - 1119	34	53	75	
	1120 - 1599	12	13	23	
	1600 - 2239	7	7	11	
	2240 - 2879	1	-	3	
	2880	1	1	-	
	<u>TOTAL</u>	<u>457</u>	<u>447</u>	<u>424</u>	<u>270</u>

Table 11 (Cont'd.)

	Farm Size	1956	1961	1966	Electric Power 1966
I.D. 132	3 ac.	-	-	-	
(Wanham)	3 - 9	1	-	1	
	10 - 69	1	2	2	
	70 - 239	100	87	61	
	240 - 399	332	241	154	
	400 - 559	116	114	84	
	560 - 759	94	101	125	
	760 - 1119	55	75	100	
	1120 - 1599	24	28	48	
	1600 - 2239	6	11	17	
	2240 - 2879	2	2	4	
	2880	-	4	5	
	TOTAL	731	665	601	433
M.D. 133	3 ac.	-	-	1	
(Spirit River)	3 - 9	1	-	2	
	10 - 69	8	2	6	
	70 - 239	84	60	37	
	240 - 399	134	84	65	
	400 - 559	73	66	56	
	560 - 759	42	39	46	
	760 - 1119	21	49	47	
	1120 - 1599	10	11	21	
	1600 - 2239	-	2	7	
	2240 - 2879	1	2	2	
	2880	1	2	2	
	TOTAL	375	317	292	211

Table 11 (Cont'd.)

	<u>Farm Size</u>	<u>1956</u>	<u>1961</u>	<u>1966</u>	<u>Electric Power 1966</u>
I.D. 134	3 ac.	-	1	-	
(Blueberry	3 - 9	-	-	1	
Mountain)	10 - 69	1	6	1	
	70 - 239	162	122	101	
	240 - 399	344	286	310	
	400 - 559	124	135	145	
	560 - 759	74	116	144	
	760 - 1119	37	55	109	
	1120 - 1599	6	7	39	
	1600 - 2239	1	2	9	
	2240 - 2879	1	1	2	
	2880	-	1	3	
	<u>TOTAL</u>	<u>750</u>	<u>732</u>	<u>864</u>	<u>483</u>
M.D. 135	3 ac.	-	-	1	
(Grimshaw)	3 - 9	2	-	2	
	10 - 69	7	7	11	
	70 - 239	66	58	55	
	240 - 399	101	74	46	
	400 - 559	85	74	56	
	560 - 759	49	53	51	
	760 - 1119	41	54	65	
	1120 - 1599	13	20	21	
	1600 - 2239	1	5	11	
	2240 - 2879	2	1	3	
	2880	2	3	5	
	<u>TOTAL</u>	<u>369</u>	<u>349</u>	<u>327</u>	<u>245</u>

Table 11 (Cont'd.)

	<u>Farm Size</u>	<u>1956</u>	<u>1961</u>	<u>1966</u>	<u>Electric Power 1966</u>
M.D. 136	3 ac.	-	1	-	
(Fairview)	3 - 9	-	-	-	
	10 - 69	2	4	4	
	70 - 239	63	62	33	
	240 - 399	107	78	47	
	400 - 559	100	76	60	
	560 - 759	83	74	66	
	760 - 1119	56	67	85	
	1120 - 1599	17	25	33	
	1600 - 2239	5	8	10	
	2240 - 2879	1	2	3	
	2880	-	2	3	
	<u>TOTAL</u>	<u>434</u>	<u>399</u>	<u>344</u>	<u>260</u>
I.D. 138	3 ac.	-	1	-	
(Manning)	3 - 9	-	-	-	
	10 - 69	4	3	5	
	70 - 239	161	126	95	
	240 - 399	344	285	240	
	400 - 559	158	177	178	
	560 - 759	111	118	133	
	760 - 1119	69	94	113	
	1120 - 1599	20	30	45	
	1600 - 2239	5	12	12	
	2240 - 2879	-	3	3	
	2880	-	1	5	
	<u>TOTAL</u>	<u>872</u>	<u>849</u>	<u>829</u>	<u>479</u>

Table 11 (Cont'd.)

	<u>Farm Size</u>	<u>1956</u>	<u>1961</u>	<u>1966</u>	<u>Electric Power 1966</u>
I.D. 139	3 ac.	-	-	-	
(Hines Creek)	3 - 9	1	-	2	
	10 - 69	2	3	1	
	70 - 239	140	84	81	
	240 - 399	295	240	273	
	400 - 559	154	135	156	
	560 - 759	73	133	152	
	760 - 1119	75	84	128	
	1120 - 1599	22	37	57	
	1600 - 2239	5	8	16	
	2240 - 2879	3	3	4	
	2880	-	4	8	
	<u>TOTAL</u>	<u>770</u>	<u>731</u>	<u>878</u>	<u>430</u>

I.D. 144 No farms in 1966-61-56

I.D. 145	3 ac.	-	-	-	
(Cadotte -	3 - 9	-	-	-	
Little Buffalo)	10 - 69	-	-	-	
	70 - 239	1	1	1	
	240 - 399	1	2	1	
	400 - 559	2	2	-	
	560 - 759	-	-	1	
	760 - 1119	-	2	-	
	1120 - 1599	-	-	-	
	1600 - 2239	-	-	-	
	2240 - 2879	-	-	-	
	2880	-	-	-	
	<u>TOTAL</u>	<u>4</u>	<u>7</u>	<u>3</u>	<u>1</u>

Table 11 (Cont'd.)

	<u>Farm Size</u>	<u>1956</u>	<u>1961</u>	<u>1966</u>	<u>Electric Power 1966</u>
I.D. 146	3 ac.	-	-	-	
(Keg River)	3 - 9	-	-	1	
	10 - 69	1	-	-	
	70 - 239	17	11	4	
	240 - 399	22	27	13	
	400 - 559	8	13	12	
	560 - 759	1	8	6	
	760 - 1119	3	2	12	
	1120 - 1599	-	2	1	
	1600 - 2239	-	-	-	
	2240 - 2879	-	-	1	
	2880	-	-	-	
	<u>TOTAL</u>	<u>52</u>	<u>63</u>	<u>50</u>	<u>19</u>
I.D. 147	3 ac.	-	1	1	
(Ft. Vermilion)	3 - 9	4	1	-	
	10 - 69	3	2	2	
	70 - 239	68	73	49	
	240 - 399	128	123	90	
	400 - 559	33	31	37	
	560 - 759	21	27	33	
	760 - 1119	11	13	19	
	1120 - 1599	3	8	10	
	1600 - 2239	3	-	2	
	2240 - 2879	-	1	2	
	2880	-	-	-	
	<u>TOTAL</u>	<u>274</u>	<u>280</u>	<u>245</u>	<u>40</u>

Table 11 (Cont.d)

	<u>Farm Size</u>	<u>1956</u>	<u>1961</u>	<u>1966</u>	<u>Electric Power 1966</u>
I.D. 148 & 149	No farms in 1966-61-56				
County #1	3 ac.	-	-	2	
(Grande Prairie)	3 - 9	11	2	9	
	10 - 69	16	16	20	
	70 - 239	517	355	245	
	240 - 399	692	604	466	
	400 - 559	432	419	388	
	560 - 759	278	283	305	
	760 - 1119	184	210	246	
	1120 - 1599	47	72	98	
	1600 - 2239	10	14	27	
	2240 - 2879	2	6	11	
	2880	3	3	7	
	TOTAL	2192	1984	1824	1359
Ind. Res.	3 ac.	-	-	-	
	3 - 9	-	4	-	
	10 - 69	4	5	2	
	70 - 239	30	12	13	
	240 - 399	10	6	4	
	400 - 559	3	4	5	
	560 - 759	-	4	-	
	760 - 1119	3	1	-	
	1120 - 1599	-	-	-	
	1600 - 2239	-	-	-	
	2240 - 2879	-	-	-	
	2880	-	-	-	
	TOTAL	50	36	24	22

COMMERCIAL FARMS AND FARM RENTALS

The question is frequently asked in rural communities, and throughout Canada, regarding the ease of entry into farming: To the extent that land can be rented it is generally easier for a young or starting couple to begin farming with less capital. Since 1 million of the 5 million acres in farms in C.D. 15 are rented (20%), a sizeable acreage is available to those who wish to enter into farming. In Alberta 14.5 million out of 48.9 million acres farmed (35%) are rented. The table on the following page covers the area rented by I.D.

Of the total farms in C.D. 15, 54% are of commercial size. These are farms which sold \$2,500 or more of farm produce in 1966. In Alberta 71% of the total farms are of commercial size. The number of small farms, those selling a small amount of farm product, is comparatively large in C.D. 15 (46% vs. 29%). This constitutes a serious farm adjustment problem. Data which supports the dimensions of this problem is also found in the section documenting farm sizes.

It is important to note that although 54% of the farms in C.D. 15 are commercial compared to 71% for Alberta, these farms encompass 77% of the land in farms compared to 62% in the province. This indicates that considerably more land is required in the Peace River Area to reach a sales volume of \$2,500. This is also a reflection of specialization in grain production in C.D. 15. Grain farming requires more extensive land holdings than livestock farming to reach comparable sales volumes.

Table 12
AREA IN FARMS BY I.D.: AREA IN COMMERCIAL FARMS
NUMBER OF CENSUS AND COMMERCIAL FARMS BY SUB-DIVISION (1966)^{1/}

Sub-Division	Total Area In Farms	Area Owned	Area Rented	Area Managed	Area In Commercial Farms	No. of Comm. Farms	No. of Census Farms	Commercial As % Of Census Farms
I.D. 110	18,969	13,793	5,176	-	1,900	2	33	6
111	23,245	18,571	3,894	760	11,471	14	42	33
123	-	-	-	-	-	-	-	-
124	52,668	40,812	11,696	160	21,473	101	196	52
125	229,051	179,274	4,702	2,713	131,497	193	489	39
126	254,386	185,243	67,830	1,313	131,398	168	470	36
128*	-	-	-	-	-	-	-	-
129	3,430	3,270	160	-	1,120	3	8	38
130	496,961	377,725	99,873	19,363	345,576	534	925	58
131	241,825	194,688	43,285	3,852	161,054	209	424	20
132	409,808	313,131	60,745	35,932	294,156	387	601	64
133	177,494	140,839	35,055	1,600	148,383	199	292	68
134	464,611	352,032	84,414	28,165	269,008	378	864	44
135	219,051	165,946	46,308	6,797	192,514	240	327	73
136	248,498	195,637	50,239	2,622	222,765	271	344	79
138	479,307	372,315	83,361	23,631	296,361	364	829	44
139	549,656	396,963	123,276	29,417	354,340	439	878	50
144	-	-	-	-	-	-	-	-
145	1,112	1,112	-	-	512	2	3	66
146	28,026	21,154	6,872	-	16,055	21	50	42
147	112,523	82,278	27,365	2,880	54,289	84	245	34
148	-	-	-	-	-	-	-	-
149	-	-	-	-	-	-	-	-
G.P. County	1,033,674	808,544	204,897	20,233	806,897	1,212	1,824	66
I.R.	5,773	5,323	450	-	1,420	3	24	13
Total C.D. 15	5,050,068	3,868,650	1,001,960	179,458	3,462,184	4,824	8,868	54
% Commercial	77%	20%	3%	69%				
Total Alberta	48,982,875	30,459,003	14,459,542	4,064,330	40,986,692	48,971	69,411	71
% Commercial	62%	30%	8%	84%				
C.D. 15 as a								
% of Alberta	10%	12%	7%	4%	8%	8%	13%	

* Dominion Bureau of Statistics

^{1/} Includes data for two farms in I.D. 128.

Figure 12

NUMBER OF CENSUS AND COMMERCIAL FARMS (1966)

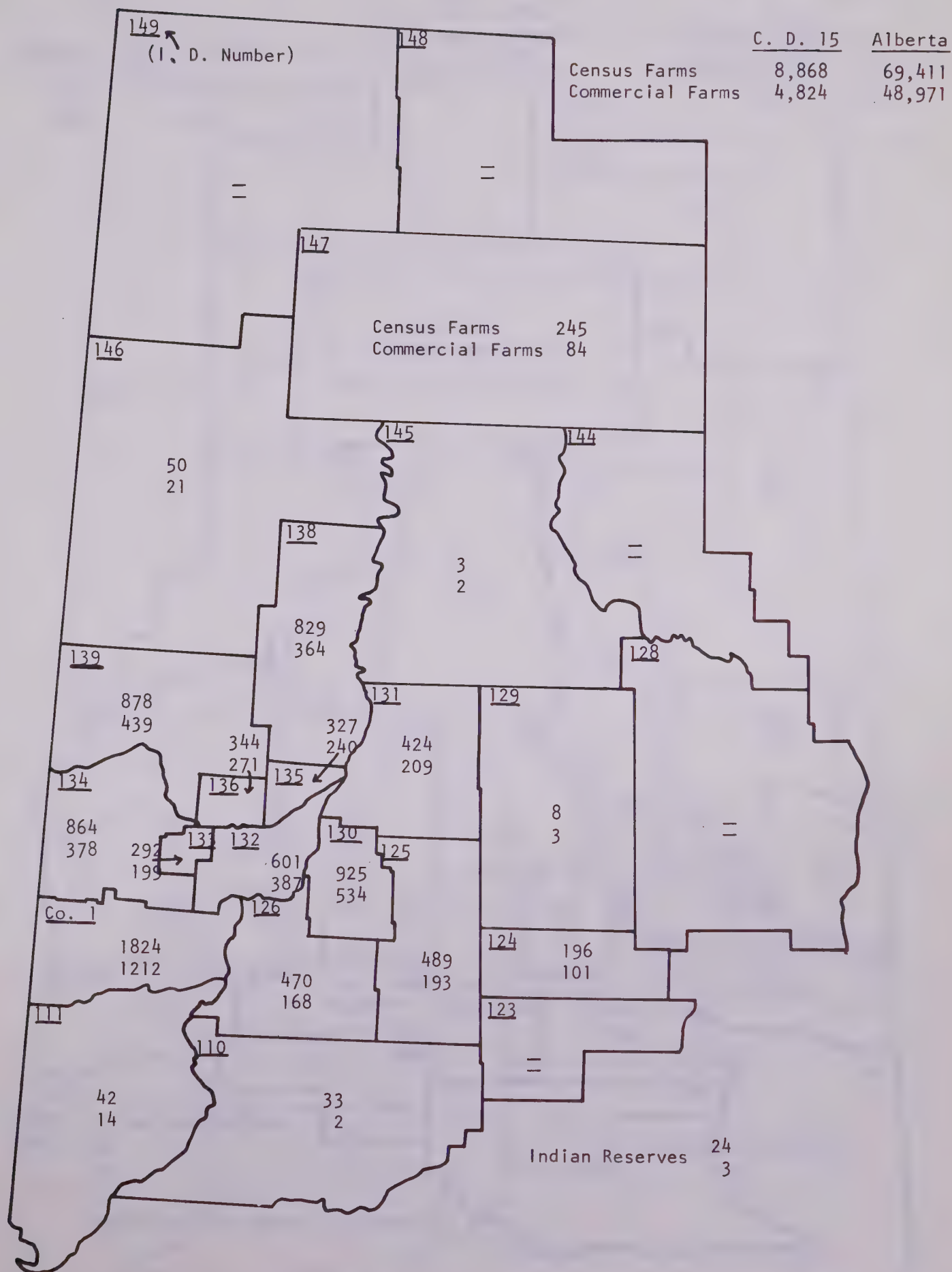


Figure 13 TOTAL COMMERCIAL FARMS 1961 & 1966 ^{1/}
(Applying 1966 definition for commercial farms to adjust 1961 data)

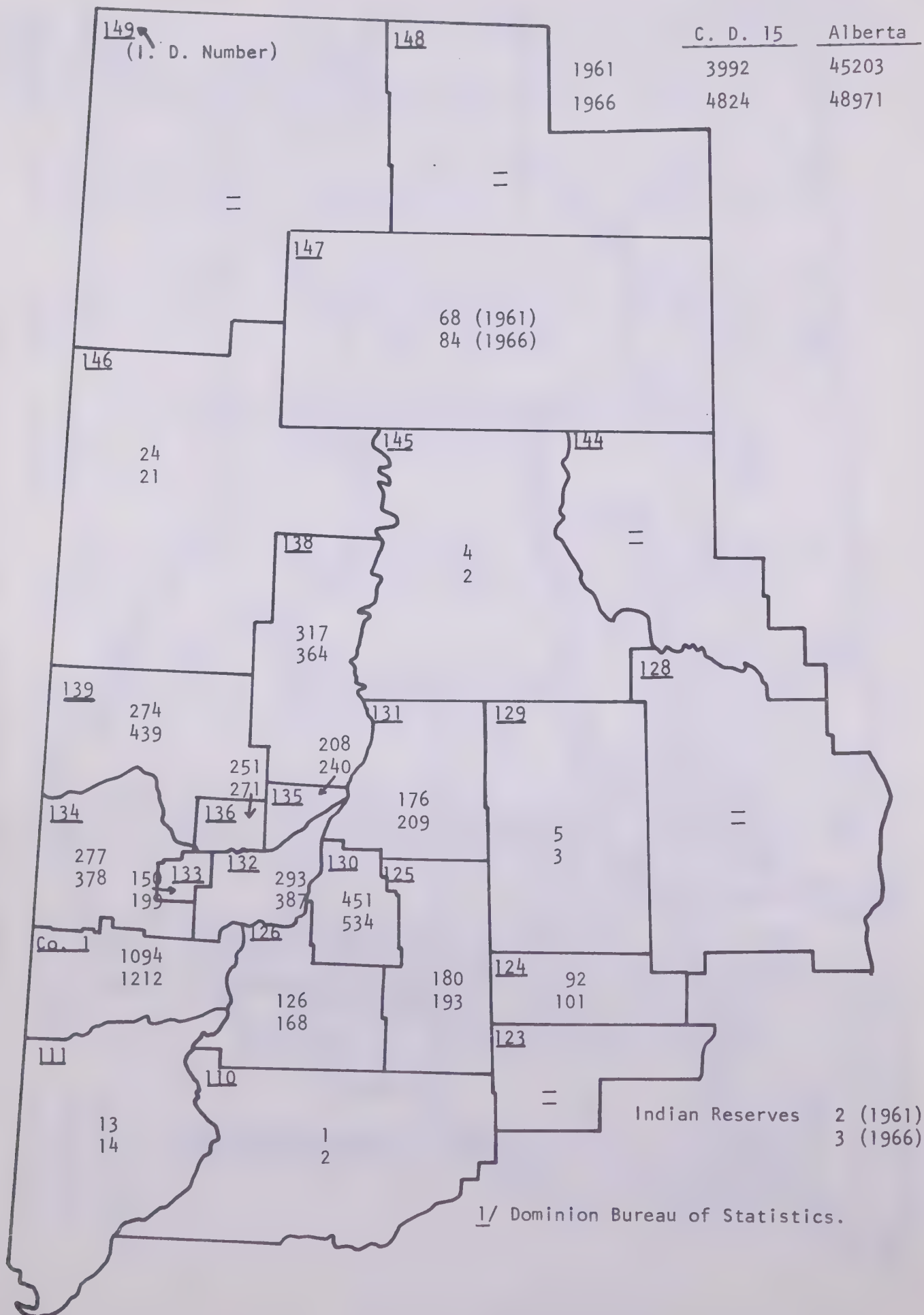


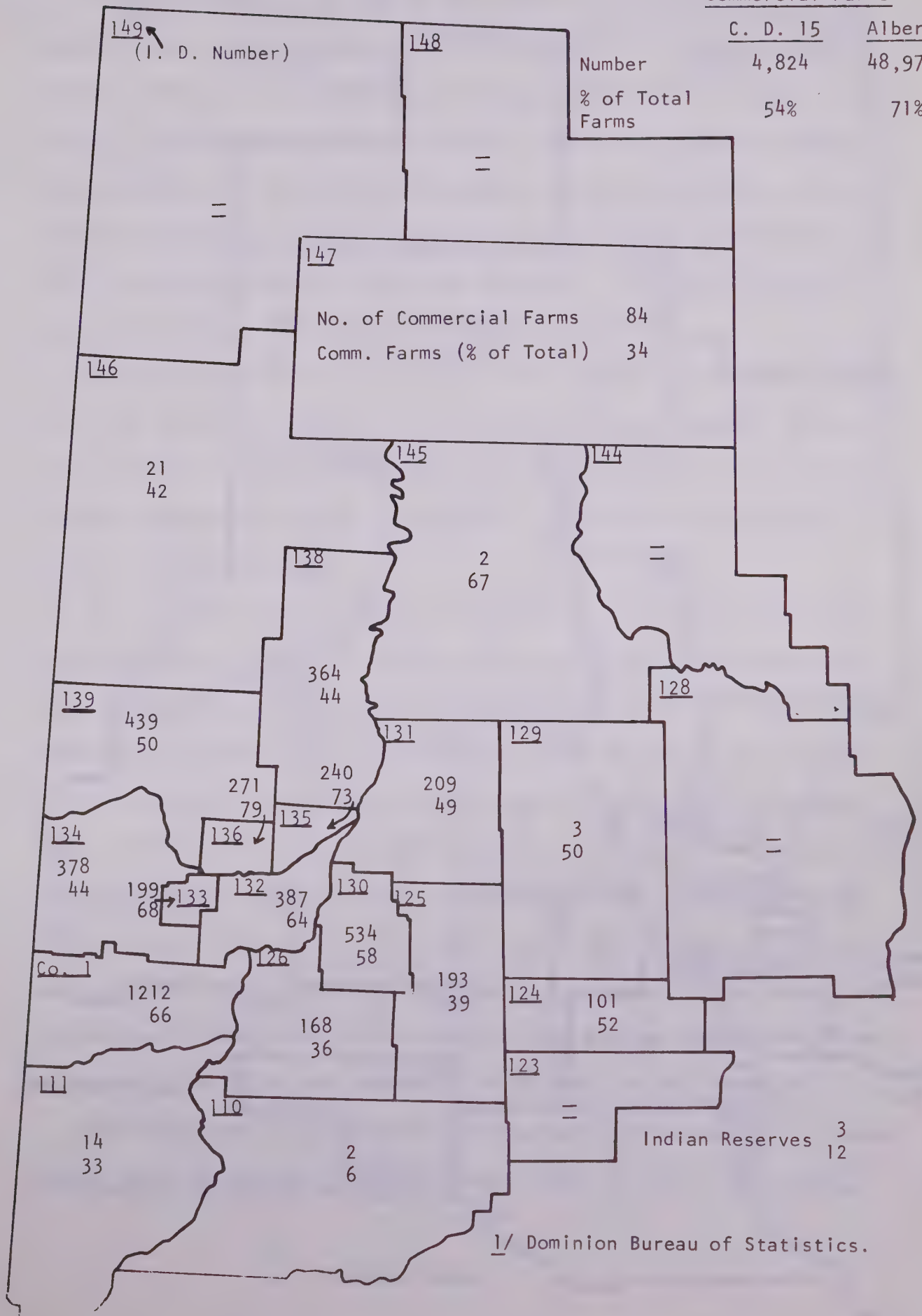
Figure 14

COMMERCIAL FARMS^{1/}

Commercial Farms

	C. D. 15	Alberta
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Number	4,824	48,971
% of Total Farms	54%	71%



^{1/} Dominion Bureau of Statistics.

Figure 15

RENTED FARM LAND^{1/}

C.D. 15

Alberta

% Farm Land Rented

20

30

Rented Land in
C. D. 15 as % of
Alberta

7

149
(I. D. Number)

148

147

As a % of Farm Land in I. D. 24%

As a % of All Rented Land in
C. D. 15 3%

146

25
1

145

144

138

17
8

139

22
12

20
5

21
5

136

135

18
4

129

5
*

134

18
8

20
3

133

15
6

132

20
10

130

21
5

125

Co. 1

20
20

27
7

126

124

22
1

123

* Less than .05%

111

17
*

110

27
1

^{1/} Dominion Bureau of Statistics.

Indian Reserves

8
*

OFF-FARM INCOME

In Census Division 15, 74% of the farmers spent 9-12 months on the farm and 26% of the farmers spent 8 months or less on their farms. In the province, 84% spent 9-12 months on the farm leaving 16% who spent 8 months or less. Off-farm employment is a primary reason for farm absenteeism. Since the region is still being homesteaded, many of the farmers continue to work off the farm to acquire capital which is used to develop farms to a point where they can be a full-time operation. This is an important feature in building net worth of homestead farmers.

Forty per cent of the Peace River farmers are part-time farmers under the D.B.S. definition compared to 26% of the provinces farmers. Thirty-eight per cent of the C.D. 15 farmers earned \$750 or more off the farm annually compared to 25% for the province. See Table 15 "Part-Time Income: Work Off the Farm".

In using part-time earnings, it is possible to estimate additional income accruing to farmers from work off the premises. By assuming that those who earned less than \$750 averaged \$375 ($0 + \$750 \div 2 = \375) and those who earned more than \$750 averaged \$1000, one arrives at the total off-farm earnings for the Peace River block of \$5,431,750 or \$612 per farm. For Alberta, using the same assumptions, the total off-farm income was \$36,872,000 or \$531 per farm. The amount of \$612 per farm can be added to farm income in C.D. 15 to approximate more closely the total income per farm family. However, this may be a conservative estimate since the assumption that those who earned over \$750 average \$1000 annually may be too low thus making the average off-farm earnings too low as well.

Farm operators in the Peace River Area are approximately 1 1/2 years younger than the average in the province, (45.7 vs. 47.1). The Area

also has 6% more farmers than the provincial proportion who are in the "44 years or younger" age group and there are 5% fewer farmers at the "45 - 54" age level than there are in the province. From age 55 to 69 the proportion of farm operators is the same in the Peace River Area as in the province. The Area has 1% fewer farmers 70 years of age and over.

In general, Peace River farmers are younger and spend more time away from their farms.

Table 13 FARM RESIDENCE: AGE OF FARM OPERATOR^{1/}
(1966)

Farm Residence	C.D. 15		Alberta	
	No. of Operators	% of Total	No. of Operators	% of Total
1 - 4 months	350	4	1,520	2
5 - 8 months	615	7	1,902	3
9 - 12 months	6,549	74	58,575	84
non-resident	1,354	15	7,414	11
TOTAL	8,868	100	69,411	100

Age of Farm
Operator (years)

Under 25	319	4	1,916	3
25 - 34	1,714	19	10,460	15
35 - 44	2,277	26	17,244	25
45 - 54	1,993	22	18,516	27
55 - 59	949	11	7,949	11
60 - 64	823	9	6,555	9
65 - 69	507	6	3,857	6
70 and over	286	3	2,914	4
TOTAL	8,868	100	69,411	100

Av. age 45.7^{2/} 47.1^{2/}

^{1/} D.B.S.

^{2/} The calculation was made from the mean of each age grouping and by assuming the youngest age group to be 22 years and the oldest to be 73 years.

Table 14 PART-TIME INCOME: WORK OFF THE FARM
HIRED LABOUR: PART-TIME OPERATORS
(1966)

	<u>C.D. 15</u>	<u>As a % Total Farms</u>	<u>Alberta</u>	<u>As a % Total Farms</u>
1. Part-time Income				
- less than \$750	5498	62	52,063	75
- \$750 and over	3370	38	17,348	25
2. Off-farm Work				
- 12 days or less - no.	181	2	2,513	4
- 13-72 days - no.	1107	12	6,142	9
- 73-228 days - no.	2137	24	8,954	13
3. Number of Hired Farm Workers				
- Male - part-time	1842		19,782	
- Female - part-time	56		1,367	
- Year-round workers	206		7,316	
4. Part-time Operators ^{1/}	3561	40	18,307	26

1/ In 1966, D.B.S. designated part-time farmers as those who:

(a) received \$750 or more in the year prior to June 1, 1966, from work off his farm

(b) received less than \$750 in the year prior to June 1, 1966, but who spent 75 days or more in off farm employment

Table 15

PART-TIME INCOME: WORK OFF THE FARM
HIRED LABOUR: PART-TIME OPERATORS
(1966)

	Part-time Income		Off-farm Work				No. of Hired Farm Workers		Year-Round Workers	Part-time Operators
	< \$750	\$750 >	12 days or less	13-72 days	73-228 days	229-365 days	Male	Female		
I.D. 110	15	18	1	3	10	6	4	0	-	19
I.D. 111	20	22	-	5	13	5	6	0	1	22
I.D. 123	-	-	-	-	-	-	-	-	-	-
I.D. 124	120	76	4	25	48	14	40	1	6	80
I.D. 125	281	208	9	62	132	58	114	3	14	233
I.D. 126	248	222	9	59	143	60	72	3	3	238
I.D. 128	-	-	-	-	-	-	-	-	-	-
I.D. 129 ^{1/}	6	2	-	3	1	1	2	0	-	2
M.D. 130	526	399	10	135	276	64	206	4	18	412
I.D. 131	249	175	13	51	121	46	97	1	8	190
I.D. 132	433	168	12	69	114	27	114	6	13	180
M.D. 133	187	105	11	27	61	24	71	1	5	107
I.D. 134	478	386	14	97	251	65	118	4	18	396
M.D. 135	229	98	8	33	52	22	91	1	11	103
M.D. 136	254	90	11	53	48	27	98	1	17	94
I.D. 138	477	352	20	115	201	87	138	0	21	365
I.D. 139	537	341	19	125	217	80	175	3	12	366
I.D. 144	-	-	-	-	-	-	-	-	-	-
I.D. 145	2	1	-	-	1	-	-	-	-	-
I.D. 146	25	25	1	10	22	1	11	-	1	28
I.D. 147	178	67	3	18	44	13	61	5	2	80
I.D. 148	-	-	-	-	-	-	-	-	-	-
I.D. 149	-	-	-	-	-	-	-	-	-	-
County #1	1,216	608	36	215	356	163	420	23	56	637
Indian Res.	17	7	-	2	6	2	3	-	-	8
C.D. 15										
TOTAL	5,498	3,370	181	1,107	2,137	765	1,842	56	206	3,561
TOTAL		8,868								
Alberta	52,063	17,348	2,513	6,142	8,954	5,491	19,782	1,367	7,316	18,307
TOTAL		69,411								

^{1/} Includes data for two farms in I.D. 128.

Table 16

SOURCE OF
OFF-FARM EMPLOYMENT FOR FARMERS^{1/}
C.D. 15 - 1951

Agr. work off the farm ^{2/}	337
Work in the woods	576
Fishing and trapping	49
Construction	761
Truck or bus driving	437
Factory production	40
Clerical work	97
Other ^{3/}	1,184
Not stated	120

Major occupations providing job opportunities for farmers off their own holding were construction, forestry, agriculture, and transportation.

^{1/} One operator may have reported more than one kind of work.

^{2/} Includes custom work.

^{3/} Other includes work at service stations, stores, cabins, etc.

Transfer Payments

Another source of off-farm income are the transfer payments made by government to farm families through several kinds of programs. The Prairie Farm Assistance Act provides financial assistance to farmers when they sustain severe crop losses due to natural causes. The amount of such payments by sub-division and based on crop acres as of 1956 and as of 1966 is shown in the map of C.D. 15 sub-division.

PFRA (Prairie Farmers Rehabilitation Act) also assists farmers with dugout construction. The size of dugout qualifying for assistance (\$150 in 1968) is 70' x 200' by 14' deep.

Other sources of farm income may include family allowance payments, veteran pensions, and other governmental programs.

Total Farm Income

The average income for all farms in C.D. 15 does not reflect the economic position of farmers as they are commonly identified. Census definitions include under "farm" everyone who holds one acre or more of land and who during the last year, sold farm products valued at \$50 or more. This classifies as farmers, urban residents who don't rely on the farm for a livelihood and may teach, practice law or medicine, or pursue other work as their main source of income. Another group affecting total income are those who practice farming on a part-time basis and rely only partly on farm income for a livelihood. This group may aim to develop into full-time farmers but may be currently largely independent of the income which they derive from the land. Thus, to call all those who sell over \$50 of farm products "farmers" and then to divide the

total sales of agricultural products by the total number of farms produces an average income per farm which is artificial for the full-time farmer. The "commercial farm" classification would reflect with greater precision the income position of full-time farmers.

Having recognized the above weaknesses in the analysis of average farm incomes, the fact that 46% of the farmers sell only 10% of the farm products, leaves a farm problem in terms of organization and management of sizeable magnitude. The portion of the 46% (4044) that is "white-collar"^{1/} farming and "blue-collar"^{2/} farming is not known. If one was to examine the group of 4044 low income farms and assume that there were 1600 "blue and white collar" farmers in this group there would still be 3,000 farms in C.D. 15 with gross farm sales below \$2,500.

An ideal analysis would include off-farm as well as farm incomes for each family. This would permit a better appraisal of the income of the family and each of the farm operators. Unfortunately, data which would permit this type of analysis is not currently available.

1/ Professional people using farming as a hobby.

2/ Part-time farmers making more than half of their income in non-farm occupations.

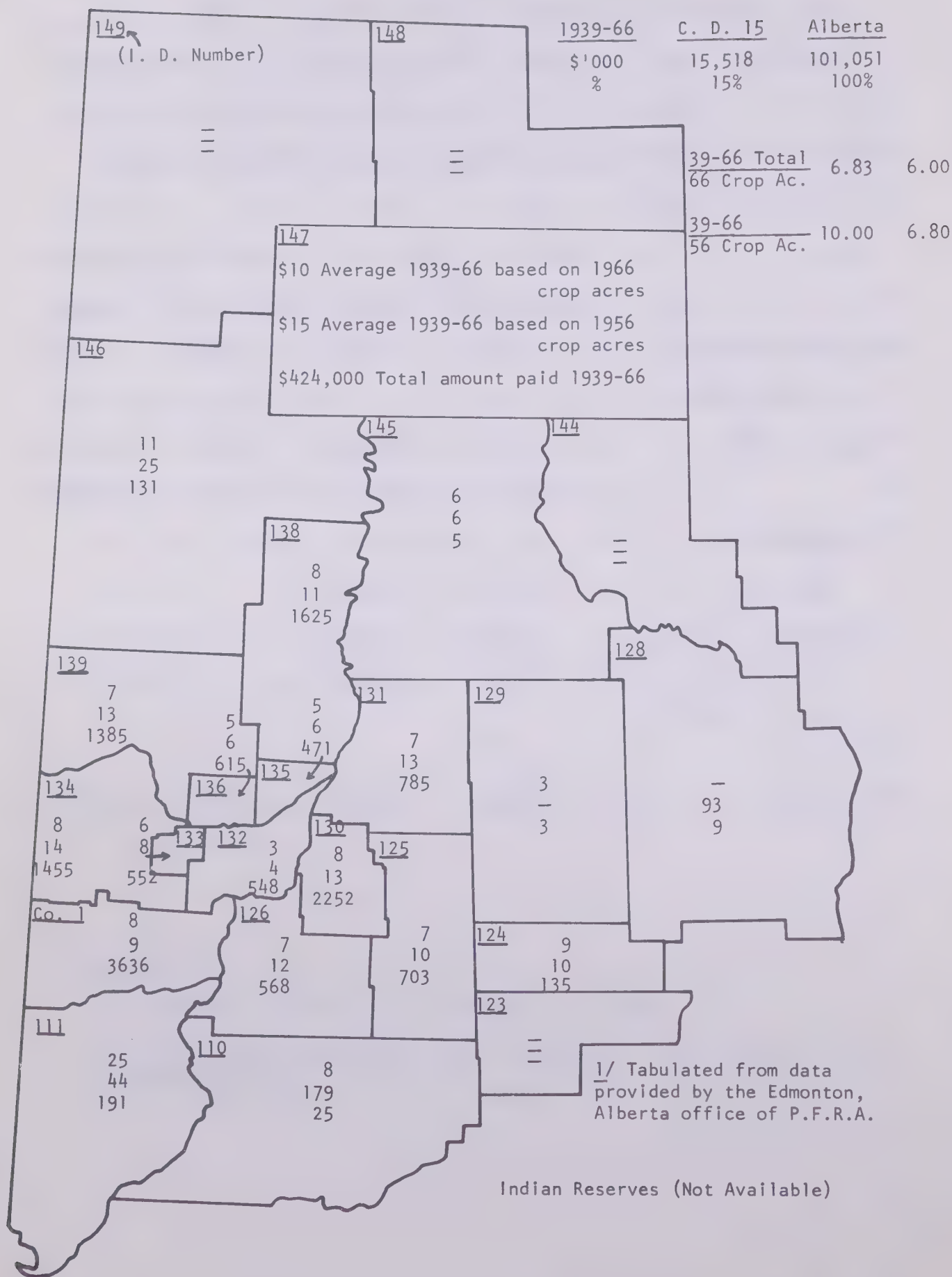
CROP INSURANCE

Crop insurance was introduced into the province in 1965. It is a joint provincial-federal program. The province administers the program through its crown corporation, the "Alberta Crop Insurance Corporation". Following is a summary of crop insurance coverage under this program for the Peace River Region:

	1966		1967	
	Peace River	Alberta	Peace River	Alberta
No. of Policyholders	1,136	4,408	1,936	9,892
% of eligible farmers	60			
Acreage insured	218,009	984,784	382,164	2,271,143
Risk	\$2,629,213	\$13,460,212	5,772,934	38,021,080
Crops (acres):				
Wheat	81,595	535,247		
Oats	20,702	93,270		
Barley	115,712	356,267		
No. of policyholders paid claims	224	455	946	1,692
Amount paid	139,300	316,000	820,000	1,265,000

Figure 16

PRAIRIE FARM ASSISTANCE PAYMENTS^{1/}



LIVESTOCK IN C.D. 15

Livestock production in C.D. 15 has undergone considerable change. While dairy cow numbers have dropped from 25,000 in 1941 to 9,000 in 1966 the total cattle numbers have been increasing; 78,000 during this same period.

Beef cattle numbers have been increasing and there is interest on the part of some of the leaders in the Peace River Area in accelerated growth of the livestock industry. Studies are needed to establish the economic feasibility of such development.

Dairying has undergone adjustment in the area. There has been a large drop in the number of farms reporting milk and cream sales (4,700 in 1956 and 827 in 1966). There has also been an increase in the number of milk cows per farm (3 in 1956 to 11 in 1966). Milk production per cow increased 64% in 10 years but the average 1966 production per cow needs to be doubled to catch up to the production of Alberta cows in DHI testing programs.

The swine quality in the Peace River Area compares favorably with Alberta's quality in general.

Sheep and poultry are relatively minor farm enterprises in terms of their contribution to the total sales of farm products from C.D. 15, although they may be of relatively high importance to the few farmers specializing in these enterprises.

The development of the crop-based economy in C.D. 15 reflects some factors of comparative disadvantages for livestock production. These factors include more difficulty in moving livestock to distant markets, the lack of readily available water supply on farms, the availability of off-farm employment which more readily provides cash for improving the

new farms then is possible from starting small livestock herds which nonetheless tie-up the labor, and other impeding factors. It may be expected that as farms become more highly developed and farmers seek to use their family labor on the farm that livestock production will gain in favor. The assumption is that over a long run, other developing industries will attract and hold their own labor force, thus reducing opportunities for off-farm work. Technology and mechanization available now is expected to assist those interested in livestock production. Lining of dug-outs with plastic to ensure water holding, pelletizing of hay along with mechanized feeding, better buildings, more and better roads along with more trucks as well as economizing and speeding up transportation, are among the factors which will eventually help reduce the comparative disadvantage. Improvements in livestock quality and management are also essential to make the industry more competitive on a provincial basis. This is highlighted in the following data.

Table 17 BEEF PRODUCTION IN C.D. 15

	<u>1951</u>	<u>1956</u>	<u>1961</u>	<u>1966</u>	<u>Projected to 1981</u>
Total cattle	52,816	92,394	116,178	136,254	
Milk cows	17,237	14,638	13,343	9,081	
Total dairy stock ^{1/}	<u>34,474</u>	<u>29,276</u>	<u>26,686</u>	<u>18,162</u>	
Beef animals ^{2/}	18,342	63,118	89,492	118,092	
Beef cows ^{3/}	9,171	31,559	44,746	59,046	90,000
Increase in beef cows (5-year periods)	244%	42%	32%		

Total cattle by municipality are shown in Table C18.

^{1/} Assumed one replacement animal in the herd for each dairy cow.

^{2/} Total cattle minus dairy stock.

^{3/} Assumed one-half of the herd to be beef cows with the remainder being replacement stock.

During the period 1951-66 the increase in the number of beef cows has been large. However, the rate of growth is currently decelerated when compared with the first part of the 15 year period. The swing from dairying, no doubt, resulted in the dual purpose cows previously used for dairying changed to beef production in the 1950's thus giving an extra boost to expansion of beef herds. In view of the slowed-up rate of beef expansion, beef cow numbers are expected to reach the 90,000 by 1981 mark. A land policy which would restrict or eliminate homesteading in the area would remove land from farms which would further dampen beef expansion. On the other hand, money which would have been assigned to purchase additional land and for land clearing by farmers in the area could now be assigned to cattle production, thus encouraging expansion of beef production if the markets are favorable. These would be counteracting forces.

Under current practices, however, expansion of livestock numbers in the Peace River Area has undergone definite deceleration in the last 10 year period when compared with the previous 5 year period. The notable exceptions are Grande Prairie County, I.D. 126 (Valleyview), I.D. 125 (High Prairie), and I.D. 124 (Kinuso-Faust). (See Table 18, "Total Cattle by Municipality".) After a slump in expansion of beef cow numbers in the years 1956-61 the four areas mentioned above regained some impetus in livestock growth from 1961 to 1966. These four areas produce 48% of the cattle in C.D. 15. Since many other subdivisions in C.D. 15 lost momentum in livestock expansion, the down-trend cannot be inferred as a general cyclical phenomenon. The subdivisions which showed resurgent growth are along the southern edge of C.D. 15 where one of the factors encouraging livestock production is in closer proximity to the Edmonton markets.

Because of decelerated beef expansion, the projected growth in beef

numbers is expected to be 20%, 15% and 10%, for the five year periods in the 1966-81 interval. On this basis beef cow numbers would reach 90,000 head in 1981. This would result in 31,000 additional beef cattle on farms. If calves were retained through the first winter (assuming spring calving) and fed on pasture the following year and then sold, the total beef population could be as follows:

Beef cows	90,000
Long yearlings $\frac{1}{2}$...	80,000
Spring calves	81,000
<hr/>	
Total	271,000
<hr/>	

Cattle marketings from the Peace River in the last five years have been weighted heavily with low grade cattle as well as feeder cattle. The percentage of 'choice' steers and heifers was only 1/3 of the provincial average; 'good' steers and heifers percentage was 1/2 of the provincial average; 'medium and common' steer marketings were equal, proportionately, but the percentage of the heifer marketings in the lower grades were twice as heavy as the provincial average. Cow marketings were 7% higher while bull marketings were equal.

A little more than twice the provincial percentage of feeder cattle were sold from the Peace River area making feeder cattle production a major component of cattle production (43% of total number sold). This excludes calves which are listed separately. Feeders and calves comprize 59% of the total marketings in the Area and 34% in the province.

Since calves sold from C.D. 15 grade favorably when compared with grades of calves sold from the rest of the province, it appears that improved feeding and management is needed to finish calves to get better

1/ Assumed a 90% calf crop and losses of 1,000 head after calving.

grades of slaughter cattle at marketing time. Although the criteria used in grading calves is different than in grading other cattle, nonetheless the above factors should be examined thoroughly for possible improvements in the cattle industry.

The large percentage of feeder cattle moving into the market indicates a possibility for fattening some of the feeders in C.D. 15 where aggregations of feeder numbers are sufficient and where uniformity of grade and grade quality are satisfactory.

There is approximately twice the percentage of feeder cattle and calves and one half the percentage of graded slaughter cattle going to market from C.D. 15 as there is from the whole province.

Table 18

TOTAL CATTLE - BY MUNICIPALITY ^{1/}

Municipality	1951	% Increase 1951-56	1956	% Increase 1956-61	1961	% Increase 1961-66	1966	% Increase 1951-56	Projected no. to 1981
I.D.									
110 Little Smoky-Fox Creek	(no	-	28	-	99	-	357	Large	357
111 Grovedale-Grande Cache	farms)	-	636	-	799	-	949	Large	949
123 Swan Hills	-	-	-	-	-	-	-	-	-
124 Slave Lake-Kinuso	1,639	63	2,671	10	2,936	23	3,602	120	1,963
125 High Prairie	4,417	51	6,665	25	8,336	35	11,221	154	6,804
126 Valleyview	2,902	67	4,845	24	6,000	48	8,855	205	5,953
128 ^{1/} Wabasca	-	-	102	-	-	-	-	-	-
129 Utikuma Lake	-	-	-	-	74	-	379	Large	379
130 Falher	2,625	88	4,949	20	5,941	2	6,060	130	3,435
131 Cadotte Lake	1,600	69	2,703	36	3,685	28	4,713	195	3,113
132 Wanham	2,937	70	5,000	32	6,587	17	7,726	163	4,789
133 Spirit River	2,214	57	3,468	30	4,518	2	4,624	109	2,410
134 Blueberry Mountain	3,886	25	4,853	15	5,602	8	6,058	56	2,172
135 Grimshaw	2,576	83	4,728	36	6,450	16	7,496	191	4,920
136 Fairview	2,795	56	4,362	36	5,952	7	6,376	128	3,581
138 Manning	5,162	41	7,289	39	10,108	2	10,356	100	5,194
139 Hines Creek	3,941	76	6,965	48	10,313	11	11,460	191	7,519
144 Burnt Lakes Area-Chipewyan	-	-	-	-	-	-	-	-	-
145 Bison Lake	-	-	111	116	230	-79	49	Decline	-62
146 Keg River	-	-	277	44	400	36	545	Large	268
147 Ft. Vermilion	108	Large	2,589	29	3,329	-7	3,112	Large	3,004
148-49 (See above-none reported any year)									
G.P. County Grande Prairie	15,855	89	29,953	16	34,604	21	41,975	165	26,120
Indian Reserves	59		200		215		341		282
TOTAL	52,816	75	92,394	26	116,178	17	136,254	158	83,438

^{1/} D.B.S. I.D.'s 123, 144, 148, and 149 did not report any livestock up to 1966. "Total Cattle" is comprised of milk, beef, and other cattle.

^{2/} Includes one farm in I.D. 129.

^{3/} Includes 2 farms in I.D. 128.

Figure 17

AVERAGE NUMBER OF LIVESTOCK
PER FARM REPORTING SALES - 1966^{1/}

Averages	
C. D. 15	Alberta
All Cattle	37
Milk Cows Only	10
Pigs	28
Sheep	77
	71
	11
	39
	130

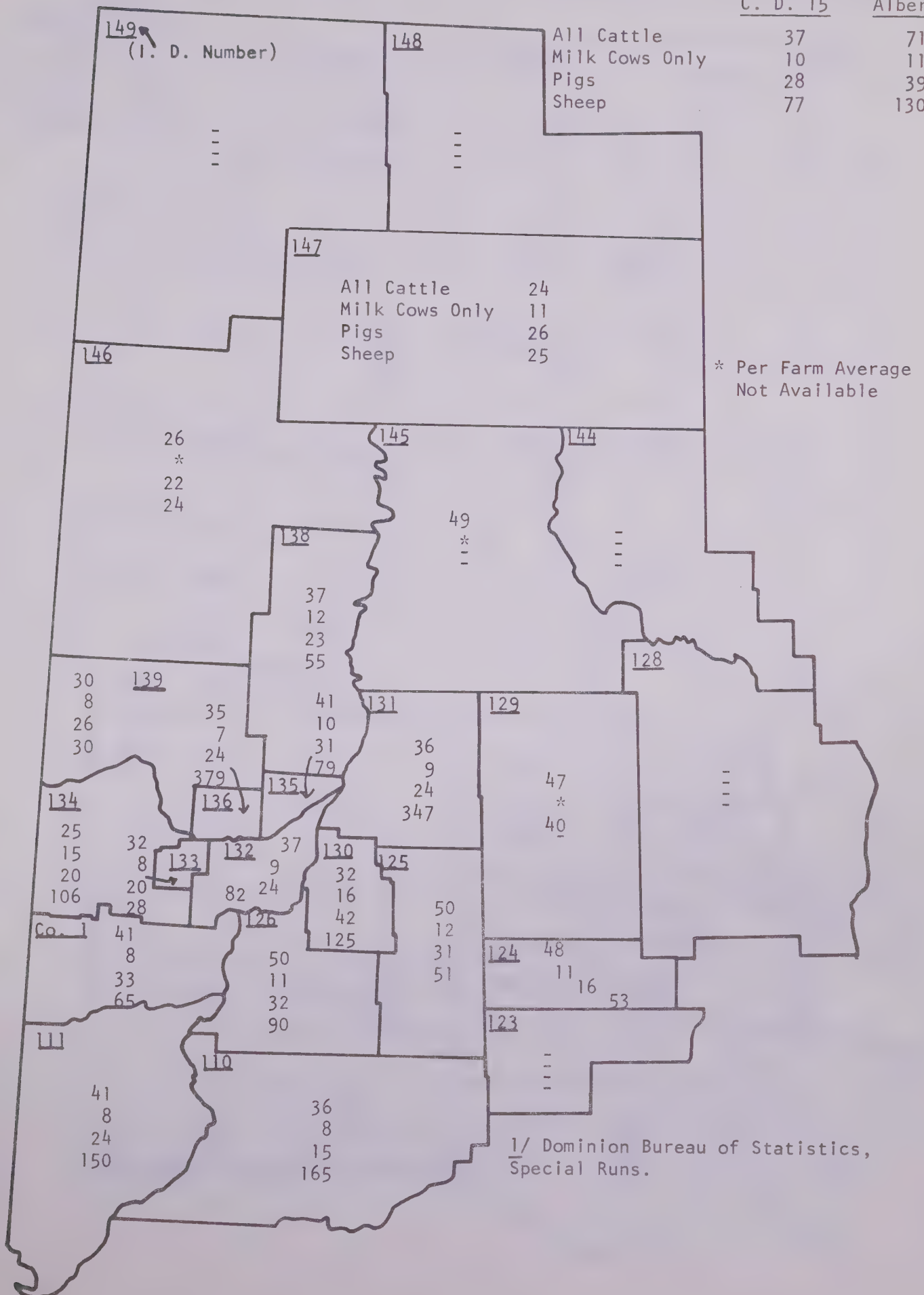


Figure 18 LIVESTOCK BY I.D., M.D., COUNTY - 1966^{1/}

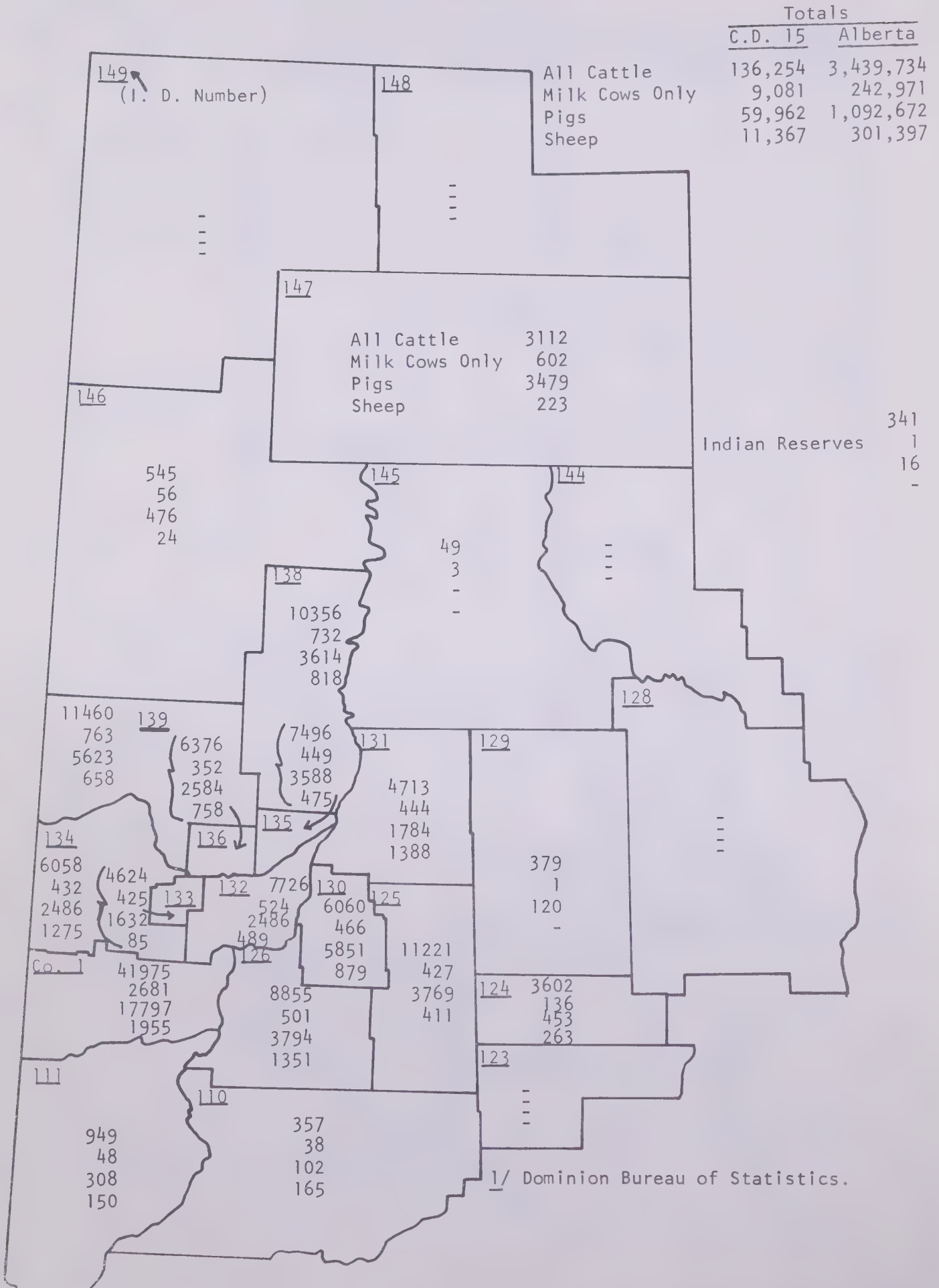


Table 19

CATTLE MARKETINGS ^{1/}

Livestock	1963			1964			1965			1966			1967			Av. 1963-1967	
	No	CD 15 % of Total	Prov. % of Total	No	CD 15 % of Total	Prov. % of Total	No	CD 15 % of Total	Prov. % of Total	No	CD 15 % of Total	Prov. % of Total	No	CD 15 % of Total	Prov. % of Total	C.D. 15	Alberta
Steers																	
- choice	2,753	8	32	2,446	11	32	2,539	7	26	3,329	8	27	3,206	9	27	9	29
- good	1,482	5	9	1,809	7	9	2,140	6	8	1,982	5	8	1,720	5	10	5	9
- med - common	1,508	5	5	1,322	5	6	2,634	7	6	2,004	5	5	1,145	3	6	5	5
- subtotal	5,743	18	46	5,577	23	47	7,313	20	40	7,315	18	40	6,071	17	43	19	43
Heifers																	
- choice	600	2	9	786	3	9	637	2	8	1,157	3	10	1,504	4	10	3	9
- good	886	3	4	704	3	5	1,112	3	5	1,527	4	6	1,419	4	8	3	6
- other	1,821	6	3	1,493	6	3	3,645	9	6	2,981	7	4	1,766	5	4	7	4
- subtotal	3,307	11	16	2,983	12	17	5,394	14	19	5,665	14	20	4,689	13	22	13	19
Cows	6,379	20	15	5,522	22	14	8,195	21	17	10,878	26	18	8,476	25	16	23	16
Bulls	796	3	2	629	2	1	861	2	2	918	2	1	632	2	1	2	2
Feeders																	
- steers	11,156	35	15	7,186	29	15	11,457	29	15	10,121	25	14	8,754	26	12	29	14
- heifers	4,126	13	6	2,853	12	6	5,274	14	7	6,040	15	7	5,669	17	6	14	6
- subtotal	15,282	48	21	10,039	41	21	16,731	43	22	16,161	40	21	14,423	43	18	43	20
Calves																	
- veal	1,286	13	15	1,201	20	21	1,326	29	24	1,213	26	20	898	24	19	22	20
- butcher	2/			2/			1,171			2,319			2,293				
- med - common	2,173	23	18	1,768	29	20	1,916	22	16	1,795	13	12	1,389	10	10	19	15
- stockers	6,162	64	67	3,131	51	59	4,185	49	60	8,221	61	68	8,832	66	71	58	65
- subtotal	9,621			6,100			8,598			13,548			13,412				
TOTAL C.D. 15	41,128			30,850			47,092			54,485			38,595				
: % sold as calves	23	60		20	55		18	53		25	55		35	72		59	
: % sold as feeders	37			33			35			30			37				
TOTAL Alberta	993,686			1,328,193			1,392,496			1,363,653							
: % sold as calves	15			15			14			14			14				
: % sold as feeders	18			20			19			17			16				
% of Prov. marketings coming from C.D. 15	4			3			4			4			3				

^{1/} Marketings include total sold at public stock yards and packing plants.^{2/} Prior to 1965 'butcher calves' were not reported as a separate grade.

DAIRYING IN C.D. 15

Table 20 COWS MILKED - PRODUCTION PER COW - PRICES ^{1/}
C.D. 15 - ALBERTA

	1936	1941	1946	1951	1956	1961	1966
No. of cows ^{2/}	19,961	25,399	22,222	17,237	14,638	13,343	9,081
Milk produced in May - lbs.					6,217,000	6,732,000	6,339,000
Annual milk prod'n. (May x 7 mos.) ^{3/} - lbs.					43,519,000	47,124,000	44,373,000
Annual milk prod'n. per cow - lbs.					3,000	3,500	4,900
Annual butterfat prod'n. per cow ^{4/} - lbs.					105	123	172
Farms reporting milk and cream sales (no.)					4,684	3,415	827
Milk cows per farm					3	4	11
C.D. 15 as % of Alberta prod'n. of milk					4.5	4.1	3.6
Cows on test in Alberta programs							
- number					6,279	13,040	18,166
- B.F. per cow - lbs.					318	372	367
- Milk prod'n. per cow - lbs.					9,173	10,548	10,547
- B.F. prices; weighted Alta. av. - per lb.					59.6¢	66.1¢	77.0¢
- Fluid milk prices; weighted Alta. av. - per cwt					\$4.50	\$4.62	\$5.12

^{1/} D.B.S. and Alberta Department of Agriculture, Dairy Branch.

^{2/} Two years and over.

^{3/} Assumed 7 months production per cow per year. Full time dairy producers keep cows in production approximately nine months a year but cream producers usually milk cows from May through September or approximately five months. Hence the seven months production period.

^{4/} Assumed butterfat content in milk at 3.5 per cent.

Dairy cow numbers in C.D. 15 reached a peak in 1941. Although data for milk production on a regional basis is not available prior to 1956, it is unlikely that C.D. 15 has ever produced much over 50 million pounds of milk even with the greater number of milk cows present in the region 25 years ago. In the early developmental stages dairying usually involved milking of at least some dual purpose cows, primarily during summer months, a practice that limits production per cow. Feeding, breeding, housing, and management were other limiting factors. Some of the early inefficient practices still persist as evidenced in the low production per cow. (4,900 pounds of milk - 172 pounds of butterfat and only 11 milk cows per herd).

Although there has been an improvement in herd size with the average farm reporting dairy product sales moving from three to eleven cows per herd from 1956 to 1966, there is a need to increase herd size to full-time dairy operations. With moderate levels of technology this point currently is approximately 30 cows. Only full-time dairy enterprises can provide all the necessary inputs to make dairying economic and efficient.

Part-time dairy enterprises usually lack in necessary technology, management, feeding and breeding programs which are necessary to make an industry efficient, competitive, and economically viable. With modern refrigeration and transportation systems milk producers in C.D. 15 are in competition for dairy markets with producers in major milk producing areas of the province. Unit costs of dairy products can be reduced through higher per cow production using good feeding, breeding, and management practices as well as new technology. A modernized and efficient dairy establishment outside C.D. 15 can thus, overcome any disadvantage in freight cost differentials. Abundance of forage and labour within a region may be insufficient grounds for development of dairying if other cost

components of efficient dairying, mentioned earlier, are absent or neglected.

The production of an average dairy cow in C.D. 15 is less than one-half of the average cow in dairy herd improvement testing program. Although full-time dairy enterprises are expected to have herd averages closer to the tested herds, the overall production of dairy herds is very low. If the dairy industry is to survive in C.D. 15, programs must be implemented to improve production averages of dairy herds to make them more competitive with herds in the more developed dairying areas.

Table 21 NUMBER OF MILK COWS BY SUBDIVISION

Subdivisions	1951	1956	1961	1966
110 Little Smoky-Fox Creek	--	5	27	38
111 Grovedale-Grance Cache	--	47	76	48
123 Swan Hills	--	--	--	--
124 Slave Lake-Kinuso	579	357	287	136
125 High Prairie	1,101	737	769	427
126 Valleyview	841	577	693	501
128 Wabasca	--	21	--	--
129 Utikuma Lake	--	--	5	1
130 Falher	1,104	1,107	1,183	466
131 Cadotte Lake	628	695	696	444
132 Wanham	1,155	971	945	524
133 Spirit River	825	786	564	425
134 Blueberry Mountain	1,607	1,089	753	432
135 Grimshaw	757	536	497	449
136 Fairview	885	628	513	352
138 Manning	894	939	1,075	732
139 Hines Creek	1,387	1,202	1,064	763
144 Burnt Lakes Area-Chipewyan	--	--	--	--
145 Bison Lake	--	6	6	3
146 Keg River	--	47	49	56
147 Ft. Vermilion	746	689	626	602
148 N.E. Corner	--	--	--	--
149 N.W. Corner	--	--	--	--
G.P. County	4,728	4,168	3,477	2,681
Indian Reserves	2	31	38	1
TOTAL	17,237	14,638	13,343	9,081

SWINE PRODUCTION IN C.D. 15

During the 15 year period 1951-66 swine production peaked in 1961 at approximately 115,000 hogs. This number fell drastically to approximately 60,000 hogs in 1966. A summary for C.D. 15 follows:

	<u>1951</u>	<u>1956</u>	<u>1961</u>	<u>1966</u>	<u>Possible in 1981</u>
Sow numbers (May)	6,000 ^{1/}	11,000 ^{1/}	12,935	8,035	100,000
Sow/pig ratio	1:8	1:8	1:8.8	1:7.5	
Annual output (2 1/2 x May)					250,000

At 4 hours of labour required to raise a 200 pound hog to market, a full time ^{2/} hog operation would produce 750 market hogs per year with modest technological inputs. Under advanced technology much larger hog operations are possible with one operator providing the management.

The production of 250,000 hogs would provide employment for approximately 330 full-time hog farmers.

Hog grades in C.D. 15 compare favorably with provincial averages. Grade A and B hogs constitute 77% of the total hog marketings in C.D. 15 and 78% in the province. A few more light hogs go to market from the area but generally, hog quality in C.D. 15 is about average for the province.

^{1/} Estimated on the basis of a sow/pig ratio of 1:8.

^{2/} An operator can provide 3,000 hours of labour per year (300 days @ 10 hours) and a family generally provides 4,000 hours of labour.

Table 22 SWINE NUMBERS - BY SUBDIVISION

Subdivision	1951	1956	1961	1966
110 Little Smoky-Fox Creek	-	17	130	102
111 Grovedale-Grande Cache	-	458	574	308
123 Swan Hills	-	-	-	-
124 Slave Lake-Kinuso	1,181	1,639	2,568	453
125 High Prairie	5,034	6,664	7,553	3,769
126 Valleyview	2,392	3,918	4,939	3,794
128 Wabasca	-	33	no farms	-
129 Utikuma	-	-	74	120
130 Falher	4,151	10,425	13,588	5,851
131 Cadotte Lake	1,380	3,348	5,163	1,784
132 Wanham	2,888	5,387	6,741	2,486
133 Spirit River	1,571	1,960	2,710	1,632
134 Blueberry Mountain	3,350	4,642	5,203	2,486
135 Grimshaw	3,418	3,926	6,215	3,588
136 Fairview	2,398	3,181	4,743	2,584
138 Manning	2,153	6,890	8,992	3,614
139 Hines Creek	3,017	5,324	10,820	5,623
144 Burnt Lakes Area- Chipewyan	-	-	-	-
145 Bison Lake	-	16	195	-
146 Keg River	-	866	1,183	476
147 Ft. Vermilion (144-149)	1,668	3,558	6,031	3,479
148 N.E. Corner	-	-	-	-
149 N.W. Corner	-	-	-	-
County #1	11,857	24,542	26,839	17,797
Indian Reserves	-	232	236	16
TOTAL	46,458	87,026	114,497	59,962

Table 23

HOG MARKETINGS

	1963			1964			1965			1966			1967			Av. 1963-1967		
	No.	CD 15 % of Total	Prov. % of Total	No.	CD 15 % of Total	Prov. % of Total	No.	CD 15 % of Total	Prov. % of Total	No.	CD 15 % of Total	Prov. % of Total	No.	CD 15 % of Total	Prov. % of Total	C.D. 15	%	Alberta
Hogs:																		
Grade A	28,595	35	35	28,096	36	34	27,458	36	39	24,986	40	41	26,274	37	38	37	37	37
Grade B	33,223	40	43	30,958	40	42	30,244	40	41	23,771	38	39	29,435	40	41	40	40	41
Grade C	5,334	6	7	5,128	7	8	4,978	7	7	3,296	5	6	5,288	7	7	6	6	7
Grade D	760	1	1	747	1	1	653	1	1	423	1	1	555	1	1	1	1	1
Subtotal	67,912	82	86	64,929	84	85	63,333	84	88	52,476	85	87	61,552	85	87	84	84	86
Light	3,159	4	3	3,051	4	3	3,424	5	3	2,630	4	2	2,270	3	2	4	4	3
Heavy	3,776	5	4	3,234	4	4	2,500	3	3	2,501	4	4	3,087	4	4	4	4	4
Extra-heavy	2,082	2	2	1,681	2	2	1,353	2	1	1,325	2	2	1,739	2	2	2	2	2
Ridglings and stags	763	1	1	785	1	1	749	1	1	588	1	1	708	1	1	1	1	1
Sows	4,875	6	4	4,196	5	5	3,810	5	4	3,098	5	4	3,651	5	4	5	5	4
TOTAL - C.D. 15	82,567			77,896			75,167			62,618			73,007					
C.D. 15 as a % of Alberta	6			5			5			5			5					
TOTAL ALBERTA *	1,350,000			1,554,000			1,634,000			1,351,000			1,563,000					

* Rounded to nearest '000.

SHEEP PRODUCTION IN C.D. 15

Sheep production in C.D. 15 is a minor agricultural enterprise. Sheep numbers from 1951-66 peaked at 20,000 in 1961 and by 1966 numbers fell to 11,000. It is possible, with modest technological inputs for one farmer to manage 400 ewes on a full-time basis. Hence the above sheep numbers could be managed on approximately 25 full-time sheep farms. It is likely that sheep numbers will fluctuate between 10,000 to 20,000 (average 15,000) in the period 1966-1981 providing employment on a full-time basis for approximately 40 sheep producers.

Sheep quality in the area is far below the provincial average. The five year average for the province of 'choice' lamb marketings, is 50%, while for the area, this grade averages 33%. There are 2% more 'good' grade lambs sold on the provincial basis. Commercial and utility grade lambs for the area have averaged 6% above the provincial 5 year average. Also 'not graded' sales are three times as numerous in the area as in the province. In addition, the category 'sheep sold' percentage is higher. The best quality grade is far below the provincial average while low grades are considerably higher. If the sheep industry in the area is to be efficient, a great deal of attention is needed on breeding, feeding, management and other factors which are essential to improvement of this industry. With only 3-4% of the sheep produced in Alberta coming from the area and because of the needed improvements, it is unlikely that much expansion will occur in the industry in C.D. 15. Attention should be focused on improvement of quality rather than on the expansion of sheep numbers.

Table 24

SHEEP NUMBERS - BY SUBDIVISION

Subdivision	1951	1956	1961	1966
110	-	-	219	165
111	-	10	11	150
123	-	-	-	-
124	363	440	518	263
125	537	850	783	411
126	226	404	1,426	1,351
128	-	-	-	-
129	-	-	-	-
130	269	557	1,214	879
131	357	158	1,357	1,388
132	271	728	1,513	489
133	168	168	221	85
134	734	1,202	2,135	1,275
135	57	316	1,027	475
136	84	9	66	758
137	-	-	-	-
138	670	601	1,466	818
139	620	1,284	2,367	658
144	-	-	-	-
145	-	1	1	-
146	-	87	307	24
147	(144-149) 248	276	312	223
148	-	-	-	-
149	-	-	-	-
County #1	1,929	3,919	5,128	1,955
Indian Reserves	-	-	-	-
TOTAL	6,533	11,010	20,071	11,367

Table 25

SHEEP AND LAMB MARKETINGS

	1963			1964			1965			1966			1967			Av. 1963-1967	
	No	CD 15 % of Total	Prov. % of Total	No	CD 15 % of Total	Prov. % of Total	No	CD 15 % of Total	Prov. % of Total	No	CD 15 % of Total	Prov. % of Total	No	CD 15 % of Total	Prov. % of Total	C.D. 15 %	Alberta %
Lambs:																	
Choice	1,234	34	47	1,873	36	60	1,237	25	50	1,083	32	53	2,486	37	64	33	50
Good	876	24	28	1,285	24	24	1,160	23	26	788	23	26	1,261	19	19	23	25
Commercial	358	10	10	896	17	8	847	17	11	546	16	9	672	10	6	14	9
Utility	87	2	2	230	4	1	210	4	2	106	3	2	252	4	2	3	2
Cull	9	-	-	51	1	-	42	1	1	11	-	-	43	1	-	1	-
Subtotal	2,564			4,340			3,496			2,534			4,714				
Not graded	774	21	8	418	8	4	994	20	6	765	23	7	1,242	19	5	18	6
Sheep:	325	9	5	535	10	3	454	10	4	99	3	3	681	10	4	8	5
TOTAL- C.D. 15	3,663			5,293			4,944			3,398			6,637				
C.D. 15 as a % of Alberta	3			3			4			4			4				
TOTAL ALBERTA	105,085			156,486			120,167			95,033			168,230				

POULTRY PRODUCTION IN C.D. 15

Number of hens on farms has decreased from a peak of 180,000 in 1956 to 129,000 in 1966. Hens on farms are expected to decline further as farmers continue to specialize and abandon the diversification principle. It is expected that hens on farms will level off at approximately 75,000 by 1981. These will be concentrated in a few large, laying-hen operations with emphasis on egg production per hen. With modest technological inputs in flocks of 1000 or larger, the labour requirement per hen is one hour. A full-time one-man operation would consist of 3,000-4,000 hens (av. 3,500). Approximately 20 full-time poultry operations could manage the 75,000 laying hens.

Table 26

HEN NUMBERS - BY SUBDIVISION

Subdivision	1951	1956	1961	1966
I.D. 110	-	159	409	494
I.D. 111	-	1,246	716	807
I.D. 123	-	-	-	-
I.D. 124	4,170	5,019	3,963	3,206
I.D. 125	8,167	9,556	9,695	6,704
I.D. 126	7,330	8,884	14,355	10,990
I.D. 128	-	208	-	-
I.D. 129	-	-	45	-
M.D. 130	12,654	16,692	11,872	8,363
I.D. 131	5,332	7,754	10,155	9,201
I.D. 132	8,351	10,408	6,680	4,421
M.D. 133	6,416	7,741	5,050	4,611
I.D. 134	12,432	13,443	10,329	5,009
M.D. 135	6,363	7,589	8,215	4,928
M.D. 136	7,547	8,822	8,778	11,304
I.D. 137	-	-	-	-
I.D. 138	6,331	17,155	15,510	11,116
I.D. 139	8,044	13,014	10,077	8,254
I.D. 144	-	-	-	-
I.D. 145	-	92	149	-
I.D. 146	-	801	974	587
I.D. 147	6,352	5,789	4,246	5,512
I.D. 148	-	-	-	-
I.D. 149	-	-	-	-
County #1	38,698	45,181	42,658	32,098
Indian Res.	-	425	255	-
TOTAL	138,187	179,978	163,631	128,605

MINK PRODUCTION IN C.D. 15

The mink industry in C.D. 15 is concentrated around Lesser Slave Lake. The lake provides a large portion of the feed used for mink production. The lake produces approximately five million pounds of tullibee which is the primary food for the mink in the area. At four cents per pound, the tullibee represents \$200,000 of income at the primary level. Mink food consists of ground fish and animal by-products mixed with ground grain. To bring a young mink to maturity, approximately 100 pounds of feed is required, of which, 60% to 70% must be fish or animal by-products. In the past, the mink ranchers utilized some 5,000,000 pounds of fish and produced some 100,000 mink pelts annually. More recently, pelt production has shown a downward trend, a reflection of a severely depressed market.

Table 27 FARMS CLASSIFIED BY FARM SALES ^{1/}

Year	\$ Groupings	Alberta		C.D. 15		L.S.L. Area	
		No.	% of comm. Farms	No.	% of comm. Farms	No.	% of comm. Farms
1961:	2500-4999	19,017	42	2,374	59	143	52
1966:	" "	13,862	28	1,960	41	77	39
1961:	5000-9999	15,976	35	1,328	33	98	36
1966:	" "	17,117	35	1,776	37	63	32
1961:	10000-14999	5,076	11	198	5	21	8
1966:	" "	8,012	16	612	13	21	11
1961:	15000-24999	3,155	7	71	2	7	3
1966:	" "	5,909	12	358	7	24	12
1961:	Over 25,000	1,979	5	21	1	4	1
1966:	" "	4,071	9	118	2	13	6
Total Commercial Farms			% of Tot. Farms		% of Tot. Farms		% of Tot. Farms
1961		45,203	61	3,992	45	273	39
1966		48,971	71	4,824	54	198	29
TOTAL FARMS							
1961		73,212		8,955		697	
1966		69,411		8,868		691	

^{1/} D.B.S.

The mink industry has returned nearly \$1,000,000 to mink ranchers in the area in 1967-68. Even with improved mink markets it is not likely that the area will support over 75 mink ranchers in the future.^{1/} It appears that ranchers need 500 or more breeder mink to be economically viable and only 56 of the 86 ranchers were in this category in 1967-68. Since 44 ranchers ceased operations from 1966 to 1967-68, a considerable adjustment has taken place in the industry. There were 86 ranchers in the Lesser Slave Lake Area in 1967-68. Whether these ranchers were in mink farming on a part-time basis or whether they were full-time operators is not known nor is there any information with regard to what the operators did after they quit mink production. An evaluation is necessary to appraise the socio-economic implications of the adjustments in the industry.

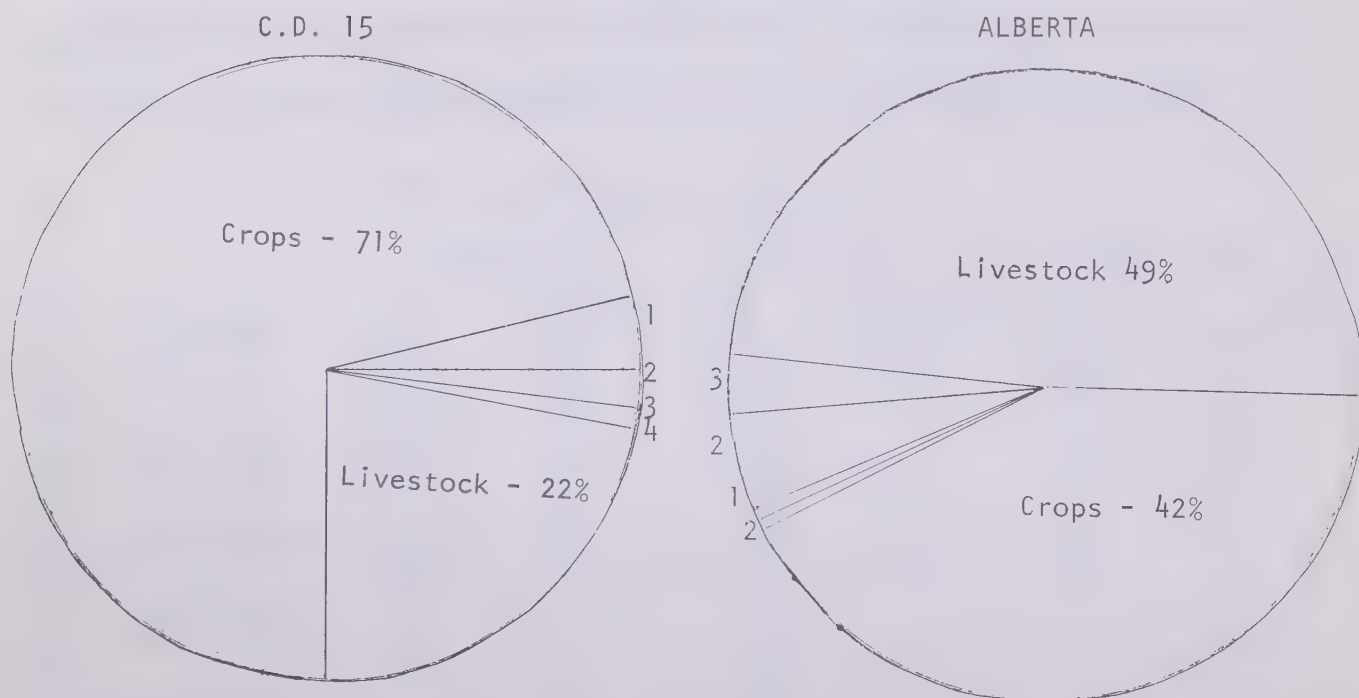
^{1/} The calculation is based on the tullibee fish harvest in Lesser Slave Lake. It is possible to expand mink production to other lakes in C.D. 15 but the market is currently depressed and the number of mink operations is not expected to increase over the current figure.

SALES OF FARM PRODUCTS

Value of Crops Sold in C.D. 15 - 1966

The total income from crops in C.D. 15 in 1966 amounted to \$29,815,670. This accounted for 70% of the total farm sales. In Alberta crops produced only 42% of the total farm income. The contribution by source of agriculture revenue for C.D. 15 and Alberta follows:

Figure 19 THE TYPE OF FARM PRODUCTS SOLD;
ALBERTA AND C.D. 15 - 1966^{1/}



	C.D. 15	Alberta
1. Other	4%	0.5%
2. Dairy Products	2%	5.0%
3. Poultry and Eggs	1%	3.0%
4. Vegetables, Fruits, etc.	-	0.5%

^{1/} Dominion Bureau of Statistics.

Table 28 "Value of Agricultural Products Sold....." compares sales data for C.D. 15 with Alberta. Commercial farms in C.D. 15 constitute 45% of the total farms. These farms produced 90% of the gross farm sales. Small scale farms, those selling farm products valued at less than \$2,500, and institutional farms comprised 55% of the total farm number and earned only 10% of the total farm income in 1966. The average commercial farm earned \$9,276 in total farm income while small scale farms averaged \$855.

For Alberta the farm total sales figures are more favorable. Commercial farms comprise 71% of the total farms and these farms sold \$12,447 worth of products. Small scale and institutional farms comprise 29% of the total in the province and their sales averaged \$1,167 per farm. The average sales for all farms in the province totalled \$9,125 compared to \$4,745 for C.D. 15.^{1/}

Several factors contributed to the very low income for small scale farms in C.D. 15. It is a relatively new farming area with many small farm units and farmers who have taken up farming rather recently. In the beginning stages farmers have attempted to accumulate capital by off farm employment and the relative income position is not truly represented by the low average for small scale farms. In addition home use of farm products and esthetic values apparently attract some of t h e

1/ One should bear in mind that the poorer census divisions, viz T2, 14, and 15 contribute to provincial averages. If these were excluded, the relative wealth indicators for the rest of the province would be higher still. For a more complete discussion of relative wealth and poverty indices, see: Regehr, Leo; Indexes of Low Income Areas, Census Division 15, Rural Development Research Branch, Economics Division, Alberta Department of Agriculture, Edmonton, Alberta, 1967.

farm families into entering or remaining in farming. As a result small farm units are established or maintained. These units cannot produce incomes higher than the minimum income under definitions of 'poverty'. Community services in areas with a preponderance of small farms may be limited by the restricted tax base which small farm units provide.

Table 28

VALUE OF AGRICULTURAL PRODUCTS SOLD AND
PER CENT OF TOTAL INCOME DERIVED FROM SUCH SALES

Enterprise	C.D. 15 ^{1/}				ALBERTA ^{3/}			
	Commercial Farms		Small Scale Institution		Commercial Farms		Small Scale Institution	
	Total Sales	As a % of Total Sales	Total Sales	As a % of Total Sales	Total Sales	As a % of Total Sales	Total Sales	As a % of Total Sales
Field Crops	26,707,050	3,108,620	29,815,670	90	253,868,210	11,186,430	265,054,640	96
Veg., Fruits, Greenhouse & Nursery Products	38,660	5,030	43,690	88	4,758,870	128,310	4,888,180	97
Poultry & Eggs	281,020	31,460	312,480	90	17,212,77~	448,900	17,651,670	98
Livestock	8,588,410	856,560	9,444,970	91	297,269,510	9,260,010	307,529,520	97
Dairy Products	679,140	51,690	730,830	93	32,095,430	1,665,690	33,761,120	95
Others (includes sale of forest products)	1,701,540	26,840	1,728,380	98	4,350,260	163,790	4,514,050	96
As a % of Total	45	55		90	71	29	-	96
Total Agr. Sales	37,995,820	4,080,200	42,076,020		609,555,050	23,844,130	633,399,180	
\$ Sales Per Farm	37,996,000	4,080,000	42,076,000		609,555,050	23,844,000	633,399,180	
	4,096 =	4,772 =	8,868 =		48,971 =	20,440 =	69,411 =	
	\$9,276	\$ 855	\$4,745		\$12,447	\$ 1,167	\$ 9,125	

^{1/} Bulletin S-208, 1966 Agricultural Census, D.B.S., Ottawa, 1968, Table 9.

^{2/} *ibid*, Table 23

^{3/} *ibid*, Table 30

Table 29 VALUE OF LIVESTOCK SOLD BY SUBDIVISION - 1966^{1/}

	Cattle & Calves		Pigs		Sheep & Lambs		Hens & Chickens	
	Value	No. Farms	Value	No. Farms	Value	No. Farms	Value	No. Farms
110	9,200	10	2,450	7	X	1	X	1
111	33,000	23	8,900	13	X	1	-	-
123	-	-	-	-	-	-	-	-
124	115,050	75	21,440	28	2,280	5	420	3
125	373,540	225	177,970	121	3,750	8	640	7
126	366,330	178	191,770	118	9,650	15	6,300	13
128 ⁽¹⁾	2 farms - included in I.D. 129							
129	9,770	8	X	3	-	-	-	-
130	346,080	192	198,630	140	7,890	7	1,250	9
131	206,150	132	77,760	73	12,080	4	2,710	5
132	362,090	208	112,600	103	4,910	6	X	4
133	276,520	146	65,620	83	1,080	3	X	3
134	289,850	245	110,550	126	6,640	12	420	6
135	568,380	185	120,090	114	4,640	6	1,670	7
136	373,040	180	118,440	107	2,550	2	1,380	11
138	495,780	280	167,930	160	6,630	15	2,850	12
139	595,640	387	212,250	220	6,590	22	180	5
144	-	-	-	-	-	-	-	-
145	X	1	-	-	-	-	-	-
146	22,690	21	21,990	22	X	1	190	3
147	93,060	129	122,170	134	820	9	2,840	33
148	-	-	-	-	-	-	-	-
149	-	-	-	-	-	-	-	-
Cty. #1	2,162,830	1,020	867,530	540	16,460	30	6,800	38
I.R.	X	6	X	1	-	-	-	-
TOTAL	6,706,450	3,651	2,602,140	2,113	89,350	147	28,210	160

X - Small figures have been omitted.

^{1/} Horses have been omitted. See Summary of "Farm Sales".

Table 30

VALUE OF LIVESTOCK AND
OTHER AGRICULTURAL PRODUCTS SOLD
BY SUBDIVISION - 1966

	Dairy		Eggs		Forest Products		Others ^{1/}	
	Value	No. Farms	Value	No. Farms	Value	No. Farms	Value	No. Farms ^{2/}
110	1,230	5	850	5	-	-	-	-
111	2,030	6	1,100	7	-	-	-	-
123	-	-	-	-	-	-	-	-
124	10,550	12	9,770	25	2,680	8	1,148,730	89 mink ranchers
125	30,570	37	4,450	15	2,030	2	70	X
126	44,250	44	34,130	33	650	3	-	X
128	-	-	-	-	-	-	-	-
129	-	-	-	-	-	-	-	-
130	30,100	30	10,550	21	-	-	238,070	X
131	49,460	48	43,740	16	X	1	-	X
132	27,750	54	2,780	11	-	-	16,310	X
133	37,030	51	7,410	12	-	-	X	X
134	8,120	28	3,630	20	X	1	X	X
135	54,460	45	10,590	13	-	-	1,400	X
136	19,810	49	49,240	24	-	-	550	X
138	65,550	59	21,420	30	-	-	250	X
139	24,780	93	2,720	25	X	X	X	X
144	-	-	-	-	-	-	-	-
145	-	-	-	-	-	-	-	-
146	-	-	330	3	190	2	X	X
147	11,410	53	8,800	37	X	X	X	X
148	-	-	-	-	-	-	-	-
149	-	-	-	-	-	-	-	-
Cty. #1	313,730	317	63,320	140	1,100	5	143,600	X
I.R.	-	-	-	-	-	-	-	-
TOTAL	730,830	931	274,830	437	7,380	27	1,732,300	X

X - Insignificantly small figures omitted.

^{1/} Honey, mink, turkeys, ducks, geese, fruits, nursery, others.

^{2/} The number of farms producing 'other' livestock products is not stated since the inclusion of many products in this group would result in double counting of farms reporting sales of 'other' products.

Table 31

VALUE OF CROPS SOLD BY SUBDIVISION - 1966^{1/}

	Wheat		Other Grains		Hay & Fodder		Potatoes & Veg.	Other PFAA etc.	
	Value	No. Farms	Value	No. Farms	Value	No. Farms	Value	Value	No. Farms
110	2,030	5	4,600	9	3,290	4	-	-	-
111	8,170	6	32,780	18	2,430	5	-	-	-
123	-	2	-	-	-	-	-	-	-
124	8,450	23	31,120	33	4,850	15	770	18,950	57
125	127,200	146	735,860	324	34,490	61	1,197	83,100	247
126	155,510	161	424,450	305	102,240	89	855	109,520	265
128	-	-	-	-	-	-	-	-	-
129	-	-	2,370	3	210	3	-	390	3
130	743,760	456	2,125,780	773	683,380	355	16,500	218,940	461
131	229,170	221	657,600	327	117,300	114	2,204	205,730	334
132	535,570	337	1,773,280	525	429,340	167	4,331	114,940	311
133	427,150	202	772,720	251	108,400	58	-	20,850	60
134	867,040	454	915,700	587	668,510	297	2,770	155,090	418
135	519,150	218	819,420	261	31,840	29	27,410	54,150	117
136	795,880	268	1,059,430	307	237,720	118	19,000	34,940	74
138	634,150	533	165,700	520	147,640	134	1,028	413,010	668
139	578,310	298	1,579,340	675	181,930	110	670	239,210	518
144	-	-	-	-	-	-	-	-	-
145	X	1	6,300	2	X	2	-	980	2
146	32,530	17	85,860	33	X	1	7,620	24,410	36
147	126,570	137	187,110	129	11,710	14	1,140	32,030	75
148	-	-	-	-	-	-	-	-	-
149	-	-	-	-	-	-	-	-	-
County #1	1,609,260	899	3,121,090	1,376	2,455,530	765	45,320	346,760	715
Indian Res.	3	3	22,500	8	-	-	-	830	3
TOTAL C.D. 15	7,402,760	4,385	14,973,010	6,466	5,226,350	2,341	130,600	2,082,950	4,386

^{1/} Special runs, D.B.S.

Table 32

SUMMARY OF FARM SALES BY SOURCE
NUMBER OF FARMS REPORTING (1966) - C.D. 15 AND ALBERTA

Crops:	C.D. 15			ALBERTA		
	Value	Farms	Value Per Farm Reporting	Value	Farms	Value Per Farm Reporting
Wheat	7,402,760	4,385	1,688	161,052,490	42,175	3,819
Other Grain	14,973,010	6,466	2,316	78,186,870	35,167	2,233
Hay & Fodder	5,226,350	2,341	2,232	10,730,800	9,330	1,150
Potatoes	98,210	92	1,068	10,094,830	1,701	6,318
Vegetables	32,390	29	1,117	1,039,940	437	2,380
Other ^{1/}	<u>2,082,950</u>	4,386	4,740	<u>4,989,650</u>	<u>11,786</u>	423
Total Crops	29,815,670			266,094,580	69,411	
Livestock:						
Cattle & Calves	6,706,450	3,651	1,837	239,274,570	48,621	4,921
Pigs	2,602,140	2,113	1,231	63,401,300	27,718	2,287
Sheep & Lambs	89,350	147	608	3,564,310	2,318	1,538
Hens & Chicks	28,210	160	176	5,644,560	3,285	1,718
Horses	<u>47,030</u>	270	174	<u>1,289,340</u>	<u>3,321</u>	388
Total Livestock	9,473,180			313,174,080		
Livestock Products:						
Dairy	730,830	931	785	33,761,120	22,578	1,495
Eggs	274,830	437	629	7,525,910	8,176	920
Forest Products	7,380	27	73	197,610	344	574
Other ^{2/}	<u>1,732,300</u>	X		<u>4,316,440</u>	712	
Total Lvstk. Products	2,745,340			45,801,080		
TOTAL SALES	42,034,190			625,069,740		
% of Alberta	7					

^{1/} 'Other' includes PFAA payments, greenhouse and nursery stock, fruit, etc.

^{2/} Value of livestock products sold in I.D. 124 amounted to \$1,148,730. This was primarily sale of mink pelts. The balance of 'other' sales in C.D. 15 is from products such as honey, turkeys, ducks, and geese.

FARMS GROUPED ACCORDING TO FARM SALES - BY SUBDIVISION FOR C.D. 15

Table 33

Small Scale Farms
with sales under
\$2,500; and
Institutional Farms*

Commercial Farms

	Sales of \$2,500 - \$3,749		Sales of \$3,750 - \$4,999		Sales of \$5,000 - \$9,999		Sales of \$10,000 - \$14,999		Sales of \$15,000 - \$24,999		Sales of \$25,000 and over	
	1961	1966	1961	1966	1961	1966	1961	1966	1961	1966	1961	1966
I.D. 96 (part)	0	0	0	0	0	0	0	0	0	0	0	0
I.D. 110	11	31	1	0	0	0	0	0	0	0	0	0
I.D. 111	34	28	2	9	3	1	0	0	0	0	0	0
I.D. 123	0	0	0	0	0	0	0	0	0	0	0	0
I.D. 124	118	95	22	14	36	29	11	9	4	32	4	11
I.D. 125	300	296	68	34	61	74	10	19	3	6	0	4
I.D. 126	322	302	43	29	43	56	6	17	3	8	2	5
I.D. 128	0	2	0	0	0	0	0	0	0	0	0	0
I.D. 129	4	3	0	0	1	0	0	0	0	0	0	0
M.D. 130	443	393	140	107	158	181	38	57	8	48	1	11
I.D. 131	271	217	77	43	55	62	5	17	3	8	0	6
I.D. 132	372	216	100	60	89	143	11	54	4	31	0	10
M.D. 133	167	93	56	34	42	83	10	27	4	14	1	4
I.D. 134	455	486	126	69	74	141	6	35	2	16	0	6
M.D. 135	141	88	67	34	68	109	14	39	4	26	0	5
M.D. 136	148	75	67	32	107	98	18	72	6	28	0	11
I.D. 137	0	0	0	0	0	0	0	0	0	0	0	0
I.D. 138	532	465	136	87	101	108	10	31	2	9	0	2
I.D. 139	457	445	116	72	75	178	9	51	2	24	0	3
I.D. 144	0	0	0	0	0	0	0	0	0	0	0	0
I.D. 145	3	1	0	0	3	2	0	0	0	0	0	0
I.D. 146	49	29	8	7	5	4	1	4	0	3	0	0
I.D. 147	212	161	35	17	13	28	1	3	0	2	1	0
I.D. 148	0	0	0	0	0	0	0	0	0	0	0	0
I.D. 149	0	0	0	0	0	0	0	0	0	0	0	0
Cty 1	890	615	363	228	394	476	48	177	26	112	12	40
Indian Reserves	34	21	2	0	0	3	0	0	0	0	0	0
C.D. 15	4963	4062	1435	1138	1328	1776	198	612	71	358	21	118

C.D. 15 had 18 institutional farms in 1966.

3 in County #1; 6 in I.D. 139; 2 in I.D. 136; 1 in I.D. 135; 2 in I.D. 132; 1 in I.D. 131; 2 in I.D. 130; 1 in I.D. 134

In 1961 there were 20 institutional farms in C.D. 15

CROP PRODUCTION

The section on sale of farm products highlights the fact that crop sales account for 71% of the farm income compared to 42% for Alberta. Livestock returns account for 22% compared to 42% for the province. Because the Peace River Area economy is crop-based, economic success of the crop industry is vital to the success of the agricultural sector. Agronomic practices which improve the efficiency of crop production should receive foremost attention.

Factors which affect the efficiency of crop production include management of soil to optimize crop production, fertilizing at optimum levels based on soil tests, inclusion of forages in rotations especially on grey wooded soils to minimize the puddling and crusting characteristics of these soils, use of best crop varieties with special attention given to early-maturing varieties, weed and insect control and other field and crop management practices.

Fertilizer sales in C.D. 15 have increased from 11,000 tons in 1962 to 26,000 tons in 1966 or 135%. For Alberta, during the same period, the increase was 136%. The rate of fertilizer application per acre, however, is lagging in C.D. 15 where it amounts to 23 pounds per acre compared to 32 pounds per acre for the province. The provincial rates per acre are 39% higher than those used in C.D. 15 in 1966. When the fact that most of C.D. 15 receives adequate moisture throughout the growing season is considered, along with the fact that most of the remaining farming areas in the province are in a semi-arid climate, it is safe to conclude that fertilizer use in C.D. 15 can be expanded considerably.

1/ Almost all of the soil suitable for farming in C.D. 15 is of the 'grey' to 'grey wooded' variety.

Wheat acreage in C.D. 15 has fluctuated primarily in response to wheat markets. In 1951 the acreage was 32% higher than in 1956 and 13% higher than in 1961. In the early 1960's when wheat sales on the national basis were increased, C.D. 15 increased the acreage in wheat by 36% over the 1961 acreage.

The acreage allocated to oat production has constantly declined in the period 1951-1966 with the drop in acreage amounting to 59% for the period.

Barley has gained favor among farmers in C.D. 15. The acreage allocated to barley has jumped 348% in the period 1951-1966. Barley now enjoys the leading position with 143,000 acres more assigned to production of barley than to the production of wheat, which is in second place.

Oil crop acreages have also enjoyed a very large percentage increase. In 1966, the oil crop acreage was greater than twice the acreage allocated to the production of oats. Rape production, which began in the area in the late 1950's, accounts for the large increase in acreage used for oil crop production.

Tame hay and fodder acreage has increased 132% from 1951 to 1966. Acreage in forages enjoys third place after barley and wheat. It is followed by oil crops, oats and mixed grains.

Table 34 CROP ACREAGES IN C.D. 15

	<u>1951</u>	<u>1956</u>	<u>1961</u>	<u>1966</u>	<u>Possible in 1981</u>
Wheat	440,091	333,732	388,368	529,437	600,000
Oats	396,999	362,881	269,598	150,922	150,000
Barley	149,982	433,674	446,662	671,756	850,000
Oil crops	31,082	134,678	227,353	376,053	500,000
Hay and fodder	216,051	272,558	445,657	501,544	700,000
Mixed grain	1,255	4,383	14,197	18,490	-

The average crop yields for C.D. 15 for a ten-year period are presented below.

Table 35		AVERAGE CROP YIELDS - C.D. 15 ^{1/}			
1958-67	Wheat	Oats	Barley	Hay	
Average	20 bu.	36 bu.	26 bu.	1.43 T.	

^{1/} Stelmaschuk, Paul J.; "Agriculture in the Lesser Slave Lake Area", An Analysis of Resources in the Lesser Slave Lake Area, Rural Development Research Branch, Economics Division, Alberta Department of Agriculture, Edmonton, 1968. p. 89

Table 36

CROP PRODUCTION IN C.D. 15

	1951	1956	1961	1966	Possible 1/ by 1981
Area in Farms (acres)	3,171,000	3,992,000	4,341,000	5,050,000	7,000,000
Improved (acres)	1,682,000	2,228,000	2,533,000	3,043,000	4,000,000
- under crop (acres)	1,249,000	1,552,000	1,811,000	2,271,000	3,100,000
1. wheat (acres)	440,091	333,732	388,368	529,437	600,000
production (bushels)	8,850,000	7,842,000	9,001,000	11,595,000	13,800,000
2. oats (acres)	396,999	362,881	269,598	150,922	150,000
production (bushels)	17,865,000	16,693,000	12,321,000	6,007,000	6,600,000
3. barley (acres)	149,982	433,674	446,662	671,256	850,000
production (bushels) ^{2/}	4,829,000	13,184,000	15,231,000	21,362,000	27,200,000
4. oil crops ^{3/} (acres)	31,000	134,678	227,353	376,053	500,000
production ^{3/} (bushels)	341,000	1,871,000	3,684,000	4,869,000	5,200,000
5. mixed grains (acres)	1,255	4,383	14,197	18,490	-
6. hay and fodder (acres)	216,051	272,558	445,657	501,544	700,000
7. Other crops eg. rye, legumes, grass seeds, etc., account for the balance of the acreage.					

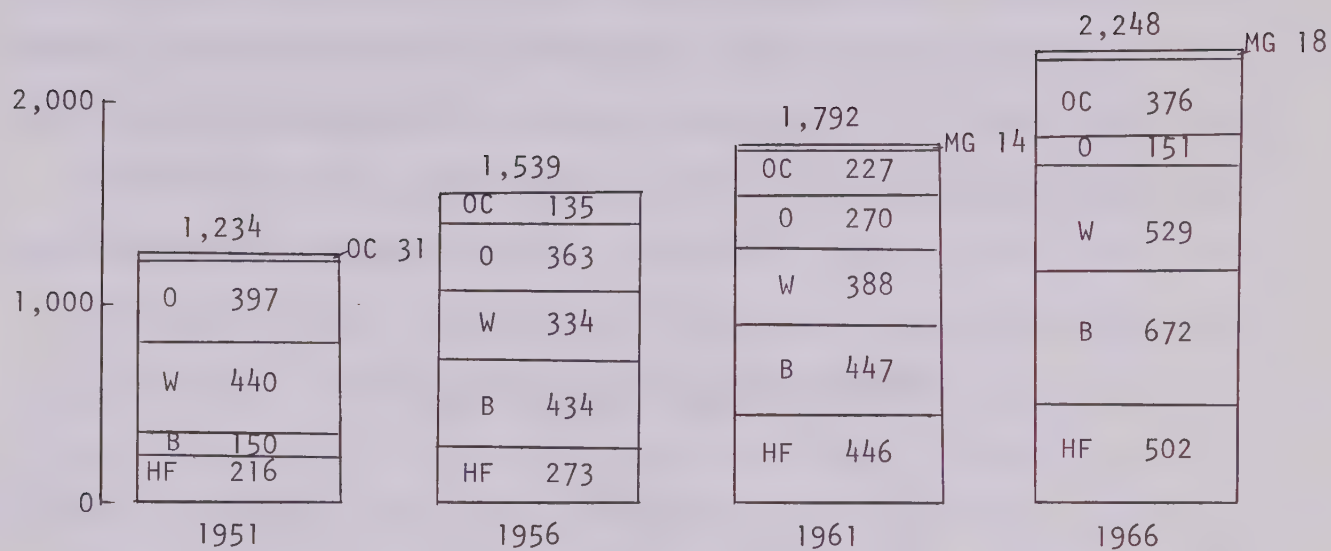
1/ Possible land use is based on trends established during the period 1951-66 and on likely live-stock feed usage in the period 1966-81.

2/ Includes flax and rape

3/ Estimated on the basis of a 60-pound bushel.

Figure 20

CROPPING PATTERNS
'000 Acres

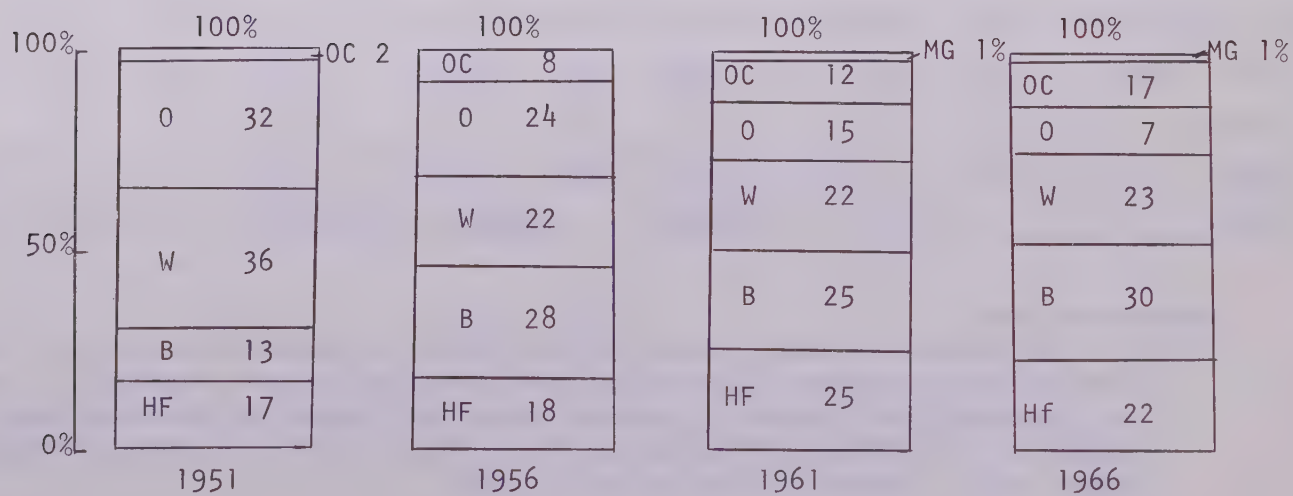


Legend

OC - Oil Crops
O - Oats
W - Wheat
B - Barley
HF - Hay and fodder
MG - Mixed grains

Figure 21

CROPPING
% Distribution



FORAGE SEED PRODUCTION

The Peace River Area is noted for its quantity and quality production of forage seeds. It is unfortunate that D.B.S. did not include questions regarding forage seed production in the 1966 Agricultural Census. Because of this, no recent data is available. Late in 1968 a special forage seed survey was conducted but the results of the survey were not available at the time of the writing of this report. A summary of the 1960 data from D.B.S. and special computation of value of seed by the writer follows:

Table 37

PRODUCTION AND VALUE OF FORAGE SEEDS C.D. 15 AND ALBERTA - 1960

Kind	C.D. 15		ALBERTA			C.D. 15 AS A % OF ALBERTA			
	Farms	lbs. '000	\$ Value ^{1/}	Farms	lbs. '000	\$ Value	% Farms	% lbs.	% Val.
Alfalfa	580	1,530	214,000	1,062	1,971	543,000	55	78	
Alsike	777	3,817	267,000	1,772	7,791	545,000	44	49	
Brome grass	739	4,146	82,000	974	5,468	109,000	76	76	
Creeping red fescue	1,228	13,428	671,000	1,283	14,037	702,000	96	96	
Crested wheat grass	50	310	25,000	114	973	78,000	44	32	
Kentucky blue grass	1	2	300	12	39	6,000	8	5	
Meadow fescue	28	137	8,000	40	210	13,000	70	51	
Red clover	383	1,351	81,000	1,434	3,587	215,000	27	38	
Sweet clover	233	2,565	77,000	395	3,119	94,000	59	82	
Timothy	59	324	13,000	232	977	39,000	25	33	
Other	18	49	NA	124	741	NA	15	7	NA
TOTAL		27,659	1,438,300		39,913	2,344,000		69	61

^{1/} The value of forage seeds was derived by using the following prices: Alfalfa 14¢ per pound, alsike 7¢, red clover 6¢, sweet clover 3¢, timothy 4¢, creeping red fescue 5¢, meadow fescue 6¢, brome 2¢, crested wheat grass 8¢, and Kentucky blue grass 15¢. These are No. 2 prices, Alberta Wheat Pool, Calgary, letter July 11, 1968.

If one was to assume that the forage seed graded 1/2 No. 1 and 1/2 No. 2 then the total income from this source for the Peace River Area would be approximately 1 3/4 million dollars. Since the seed prices were somewhat below average for 1960 the estimated income from sale of forage seed is in the neighborhood of two million dollars.

The 1966 D.B.S. figure for sales of 'other' farm crops is approximately two million dollars.

This figure includes potatoes as well but since this crop is minor in terms of sales it may be assumed that forage and legume seed sales accounted for two million dollars of farm income which is close to the estimated gross sales income from this source in 1961.

HONEY PRODUCTION

Legume seed-set is dependent upon bees for pollination. Although alfalfa seed production is dependent upon pollination by certain kinds of bees, the production of alsike, red clover, and sweet clover seed is greatly enhanced through placement of honey bee colonies in close proximity to these fields. These fields then provide the source of honey flow while the bees increase the seed-set through pollination-- a highly symbiotic relationship. If legume seed production is to remain an important source of revenue, bees will have to be used extensively to ensure the production of such seeds.

Table 38 ESTIMATED HONEY PRODUCTION - C.D. 15^{1/}

	<u>1956</u>	<u>1961</u>	<u>1966</u>
Number of colonies	14,000	27,000	50,000
Estimated lbs. of production ('000)	1,400	4,320	5,800
Price	16 1/2¢	16 1/2¢	15 1/2¢
Estimated value of honey with wax	\$235,000	\$711,000	\$900,000

The Peace River Area produced approximately 45% of Alberta's honey crop in 1967 and approximately 12% of Canada's production. The main producing area is M.D. 130 (Girouxville, Fahler, and McLennan) with 19,000 colonies. Other areas which have approximately 4,500 colonies include M.D. 136 and 135, I.D. 131, County No. 1, M.D. 133 and 132. The Manning-North Star area (I.D. 138) has 3,300 colonies and the High Prairie-Debolt area (I.D. 125 and 126) has 2,600 colonies.

Figure 22 % OF IMPROVED ACRES BY KIND OF CROPS USE - 1966^{1/}

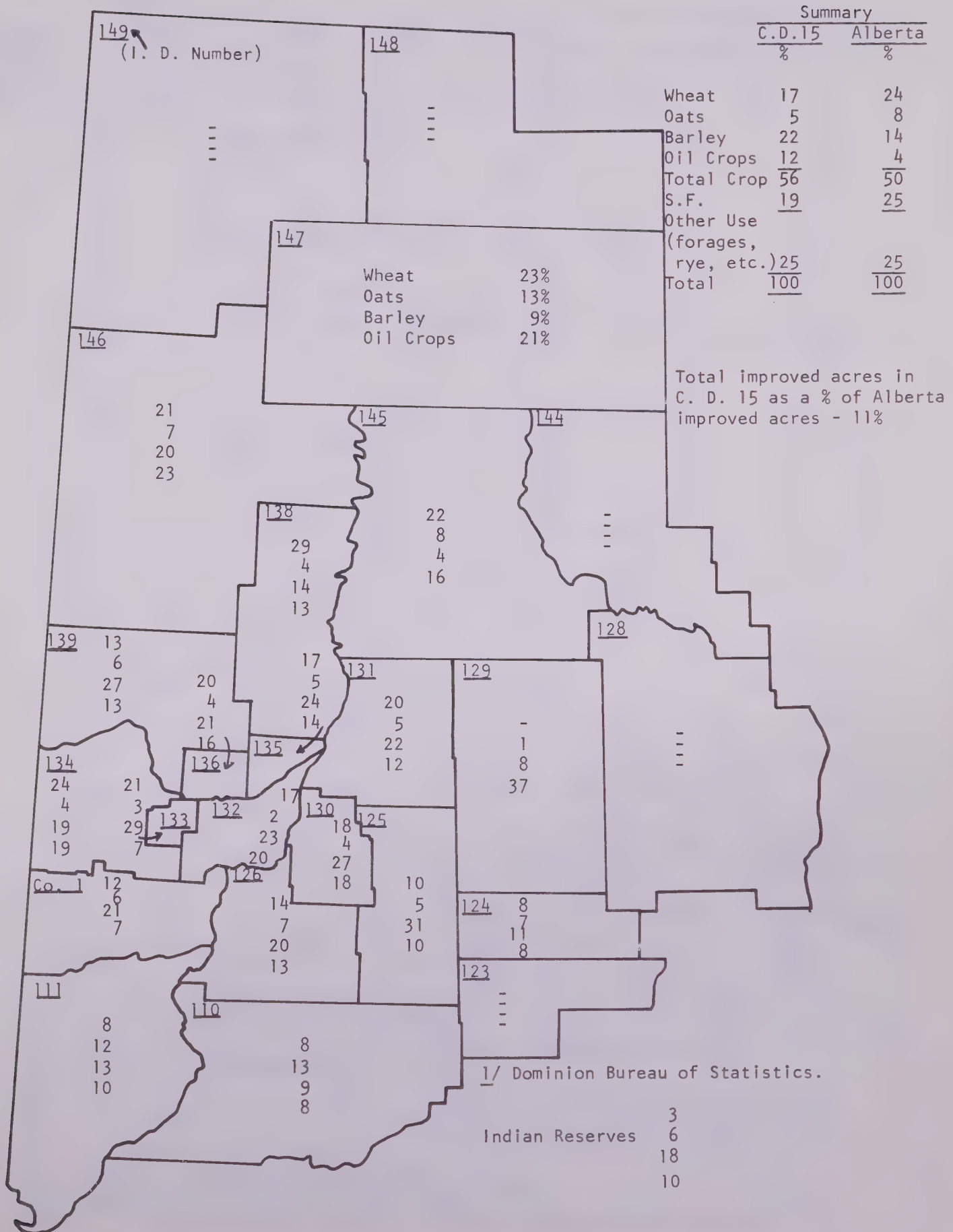
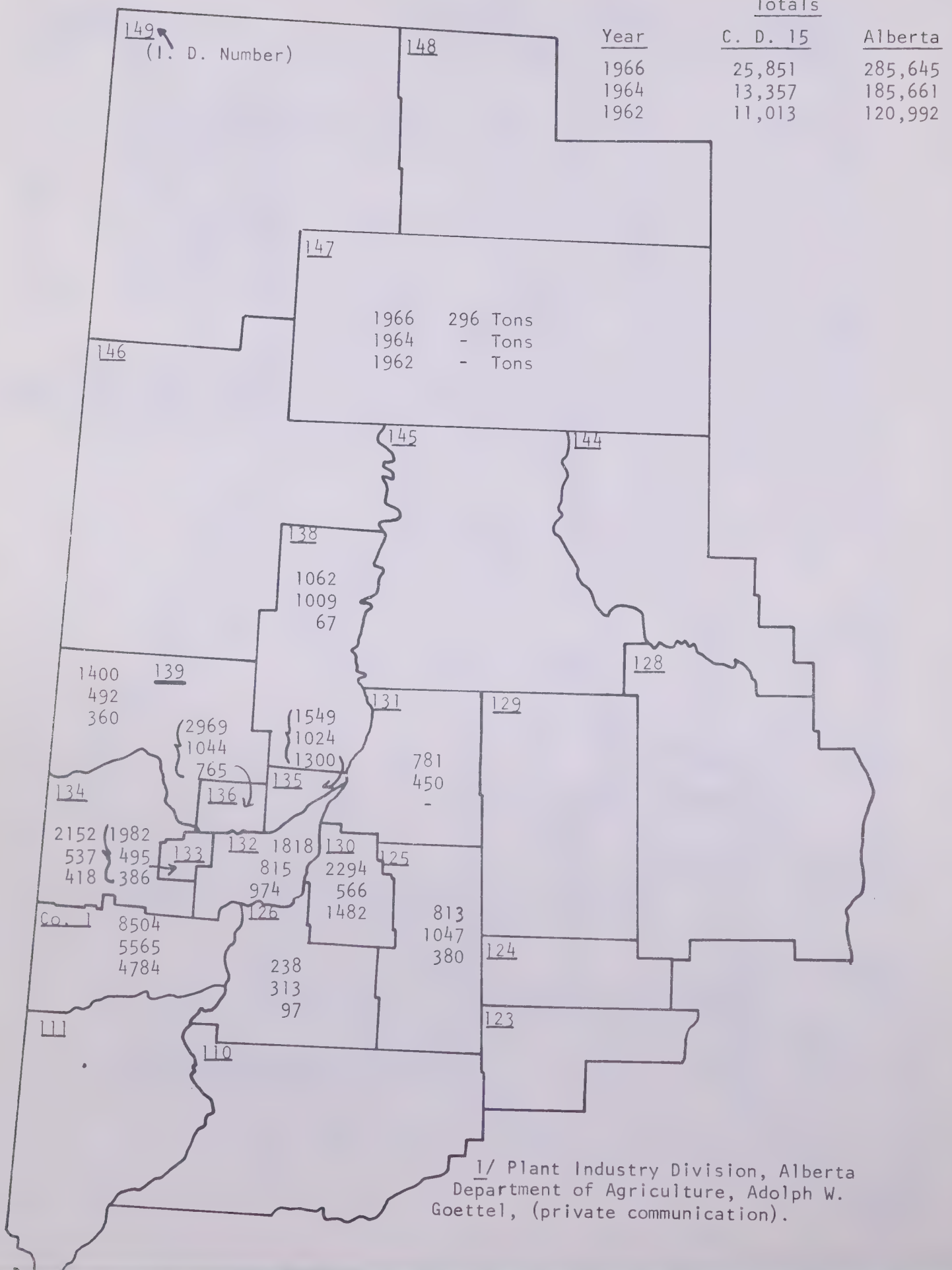


Figure 23

FERTILIZER SALES - C. D. 15^{1/}
IN TONS



^{1/} Plant Industry Division, Alberta
Department of Agriculture, Adolph W.
Goettel, (private communication).

Figure 24

TONS OF FERTILIZER SOLD - 1966^{1/}

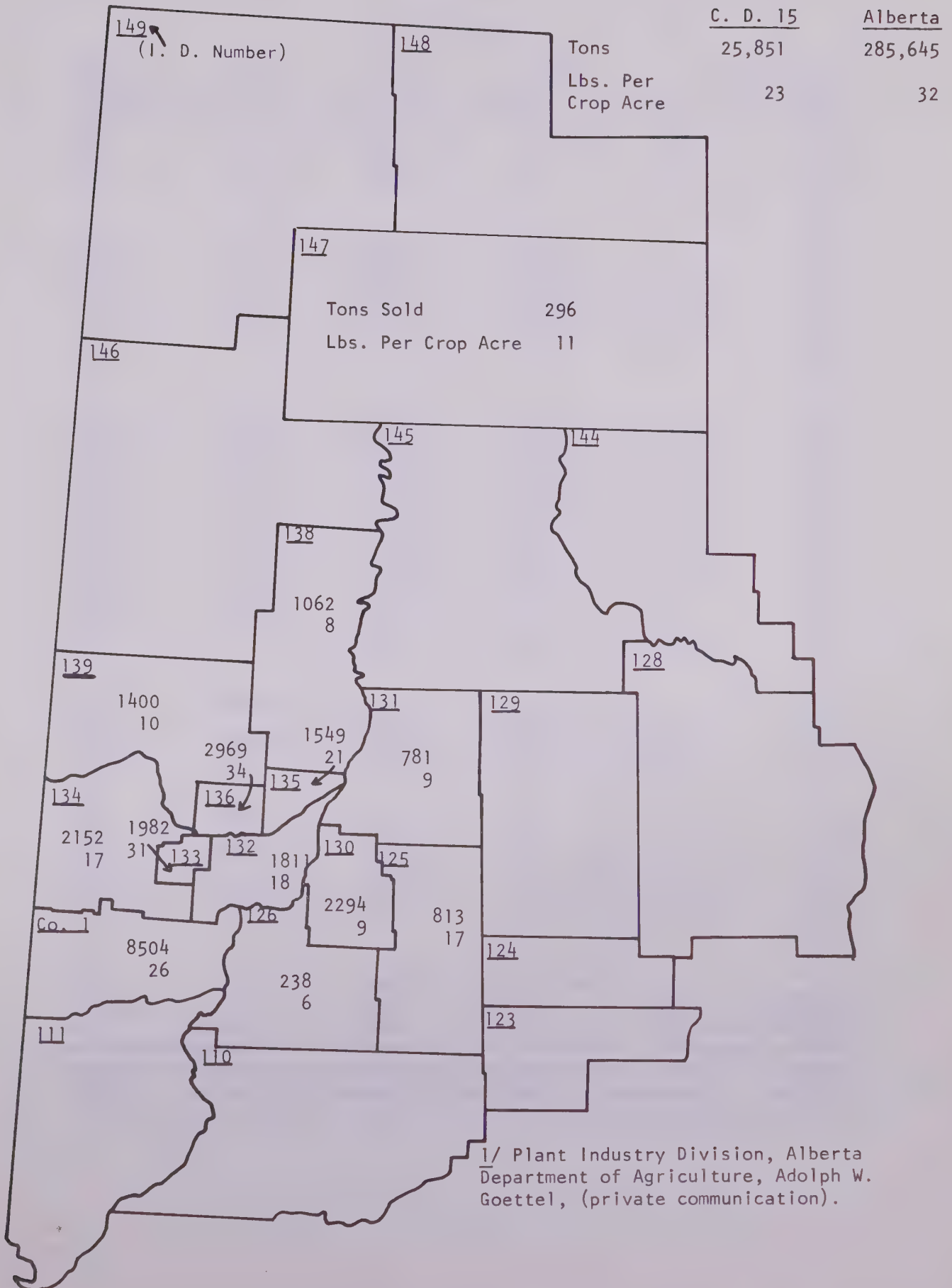


Table 39

CROP PRODUCTION BY SUBDIVISION

WHEAT				
(Acres)				
Subdivision	1951	1956	1961	1966
110	-	16	61	364
111	-	558	560	869
123	-	-	-	-
124	1,985	1,587	1,826	2,101
125	9,367	4,465	5,003	12,495
126	11,653	5,912	9,821	16,117
128	-	-	-	-
129	-	-	-	-
130	46,225	33,828	53,786	65,144
131	17,639	19,532	18,234	30,983
132	39,434	40,159	36,305	42,883
133	28,409	15,314	13,709	26,537
134	49,915	34,376	31,256	61,634
135	34,471	24,576	27,375	24,504
136	38,287	36,788	40,610	34,382
137	-	-	-	-
138	17,912	49,246	51,003	81,191
139	26,488	19,731	22,624	35,239
144	-	-	-	-
145	-	77	200	200
146	-	1,260	1,513	3,300
147	(144-149) 30,217	4,176	4,756	12,499
148	-	-	-	-
149	-	-	-	-
County #1	88,089	41,880	69,476	78,869
Indian Reserves	-	251	175	126
TOTAL	440,091	333,732	388,368	529,437

Table 40

CROP PRODUCTION BY SUBDIVISION

OATS

(acres)

Subdivision	1951	1956	1961	1966
110	-	77	392	614
111	-	1,187	1,014	1,238
123	-	-	-	-
124	5,443	4,580	4,198	1,730
125	13,346	9,170	10,722	6,334
126	15,294	11,403	13,287	7,862
128	-	35	-	-
129	-	-	54	16
130	41,232	44,029	29,392	12,822
131	9,755	11,656	12,009	7,509
132	20,490	16,617	12,015	5,693
133	15,814	10,002	7,548	4,357
134	29,612	14,965	13,709	10,018
135	27,379	19,588	14,917	7,529
136	29,162	25,048	14,607	7,273
137	-	-	-	-
138	24,223	24,515	19,381	12,184
139	30,969	35,032	26,354	15,312
144	-	-	-	-
145	-	114	214	70
146	-	919	1,272	1,134
147	(144-149) 12,115	4,765	9,348	7,138
148	-	-	-	-
149	-	-	-	-
County #1	122,165	127,893	78,081	41,829
Indian Reserves	-	1,286	1,082	260
TOTAL	396,999	362,881	269,598	150,922

Table 41

CROP PRODUCTION BY SUBDIVISION

BARLEY

(acres)

Subdivision	1951	1956	1961	1966
110	-	35	112	446
111	-	1,021	1,703	1,337
123	-	-	-	-
124	3,406	4,758	4,593	2,647
125	15,862	44,229	43,266	38,789
126	6,089	13,553	14,648	22,517
128	-	15	-	-
129	-	-	89	141
130	14,353	47,656	57,488	96,349
131	4,306	15,485	13,684	33,970
132	11,321	37,011	34,723	60,047
133	9,146	29,575	26,911	36,761
134	10,675	28,590	28,986	50,732
135	11,454	25,118	20,955	34,834
136	9,634	25,411	19,307	35,944
137	-	-	-	-
138	4,944	25,939	26,814	38,707
139	9,019	35,550	47,552	72,017
144	-	-	-	-
145	-	20	203	40
146	-	1,627	2,985	3,090
147	(144-149) 5,636	1,257	2,986	4,910
148	-	-	-	-
149	-	-	-	-
County #1	34,137	95,314	98,565	137,667
Indian Reserves	-	1,510	1,092	811
TOTAL	149,982	433,674	446,662	671,756

Table 42

CROP PRODUCTION BY SUBDIVISION

OIL CROPS

(acres)

Subdivision	1951		1956		1961		1966	
	Flax	Rape	Flax	Rape	Flax	Rape	Flax	Rape
110	-	-	-	-	18	-	50	356
111	-	-	217	-	271	165	402	637
123	-	-	-	-	-	-	-	-
124	-	-	167	-	82	575	-	2,112
125	-	-	1,199	-	1,423	1,716	3,099	9,553
126	850	-	4,936	-	4,685	2,585	5,624	8,866
128	-	-	-	-	-	-	-	-
129	-	-	-	-	-	-	-	-
130	1,502	-	19,744	-	19,634	20,496	35,750	28,085
131	689	-	5,653	-	1,874	16,157	1,308	17,845
132	8,617	-	19,864	-	9,287	27,885	11,685	39,272
133	727	-	3,220	-	1,321	6,175	1,110	7,900
134	1,877	-	5,060	-	2,988	8,479	3,972	14,272
135	1,871	-	4,443	-	1,790	8,975	932	18,716
136	1,690	-	7,158	-	4,813	5,237	5,064	22,000
137	-	-	-	-	-	-	-	-
138	521	-	24,204	-	9,408	19,777	17,256	19,366
139	1,330	-	4,834	-	1,519	10,970	3,314	37,428
144	-	-	-	-	-	-	-	-
145	-	-	325	-	293	-	145	-
146	-	-	956	-	722	2,086	526	3,059
147 (144-149)	4,110	-	11,609	-	6,312	6,000	4,364	6,822
148	-	-	-	-	-	-	-	-
149	-	-	-	-	-	-	-	-
County #1	7,298	-	20,997	-	18,852	4,389	20,689	24,124
Indian Reserves	-	-	92	-	-	394	45	405
TOTAL	31,082		134,678		85,292	142,061	115,235	260,818

Table 43

CROP PRODUCTION BY SUBDIVISION

TAME HAY AND FODDER^{1/}

(acres)

Subdivision	1951	1956	1961	1966
110	-	12	523	1,014
111	-	1,118	2,371	2,887
123	-	-	-	-
124	990	1,477	3,444	5,409
125	4,500	7,499	13,487	22,523
126	11,247	9,961	19,515	23,390
128	-	41	-	-
129	-	-	323	618
130	26,031	28,536	38,841	58,608
131	9,901	9,846	17,514	23,024
132	23,380	22,672	40,007	43,159
133	9,745	9,665	19,342	13,297
134	15,962	16,778	41,100	46,000
135	7,503	7,519	12,343	12,860
136	15,147	14,119	28,250	22,588
137	-	-	-	35,865
138	7,912	16,295	31,794	-
139	7,584	11,518	26,675	33,759
144	-	-	-	-
145	-	216	755	330
146	-	308	1,038	672
147	(144-149) 919	6,995	4,063	4,841
148	-	-	-	-
149	-	-	-	-
County #1	75,230	107,750	143,974	150,243
Indian Reserves	-	233	198	457
TOTAL	216,051	272,558	445,657	501,544

^{1/} In addition there were 302 acres of corn silage in the census division.

Figure 25

% OF IMPROVED ACRES
IN HAY, FODDER, PASTURE - 1966^{1/}

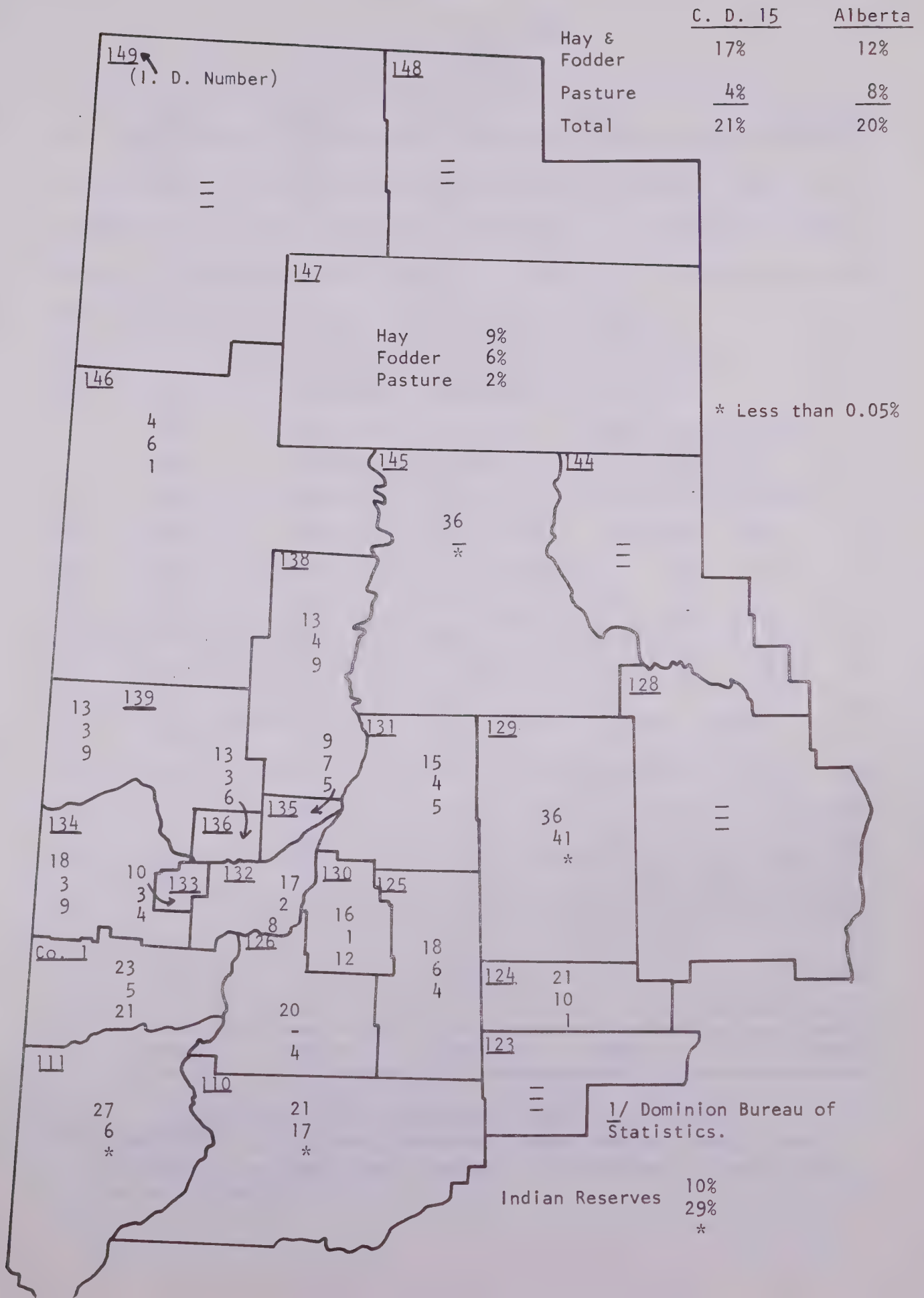


Table 44

CROP PRODUCTION BY SUBDIVISION

MIXED GRAIN^{1/}
(acres)

Subdivision	1951	1956	1961	1966
110	-	-	65	70
111	-	24	90	60
123	-	-	-	-
124	-	73	8	245
125	276	272	74	538
126	282	144	1,118	668
128	-	-	-	-
129	-	-	128	76
130	139	640	1,387	777
131	20	110	607	740
132	48	176	862	684
133	-	38	350	444
134	5	106	179	671
135	10	95	491	550
136	12	389	903	946
137	-	-	-	-
138	105	885	1,104	1,752
139	258	161	1,013	5,101
144	-	-	-	-
145	-	-	-	-
146	-	-	466	20
147	20	6	103	329
148	-	-	-	-
149	-	-	-	-
County #1	80	1,264	5,061	4,819
Indian Reserves	-	-	188	-
TOTAL	1,255	4,383	14,197	18,490

^{1/} In addition there were 7,800 acres of rye, 433 acres of corn silage, and 866 acres of potatoes grown in C.D. 15 in 1966.

FARM CAPITAL

Land, labour, capital and management are combined to achieve agricultural productivity. Capital values of buildings, machinery and equipment, livestock and poultry, as well as land are shown in Table 48, "Farm Capital by Subdivision". Capital value per farm in C.D. 15 is \$39,500 while for Alberta it is \$60,700 or 54% higher than in C.D. 15. A comparison of capital values per farm by item of farm production follows:

Table 45 THE COMPONENTS OF CAPITAL VALUES PER FARM
FOR C.D. 15 and ALBERTA

	C.D. 15	Alberta	Additional Increase Needed to Equal Alberta	
Land and buildings	\$26,700	\$41,300	\$14,600	(55%)
Machinery and equipment	10,000	11,300	1,300	(11%)
Livestock and poultry	2,500	8,100	5,600	(224%)
Total Capital Per Farm ^{1/}	\$39,500	\$60,700	\$21,200	(54%)

The crop economy of C.D. 15 is reflected in somewhat comparable level of investments in machinery and equipment when compared with the provincial investments. A much greater investment of capital is found in livestock and poultry on a provincial basis. Also a higher degree of development is evident in land and buildings on the average farm in Alberta when compared with C.D. 15.

^{1/} Because the numbers were rounded, the total may not equal the sum of its parts.

Even though the rate of growth in farm capital values is faster in C.D. 15 than for the province at large (22% gain in five years), the value of farms in C.D. 15 in 1966 is only slightly greater than the value of farms in Alberta in 1961. With a 22% gain on Alberta every five years, it would take 23 years to equate the values of farms in C.D. 15 with average Alberta farm values.

Since farm values are a reflection of farm productivity and adjustment in size a reflection of the effort to obtain higher levels of production, a considerable amount of adjustment is necessary as indicated below.

Table 46

NUMBER OF FARMS BY FARM SIZE ^{1/}
AND AVERAGE SALES BY FARM SIZE
1966

Acres	C.D. 15				ALBERTA			
	1961	1966			1961	1966		
	No.	No.	% of Total	Average Sales	No.	No.	% of Total	Average Sales
1-2	27	27	0.3	12,193	238	323	.5	6,092
3-9	47	57	0.6	10,639	683	792	1.1	5,182
10-69	94	104	1.2	5,067	1,813	2,298	3.3	6,295
70-239	1,555	1,162	13.1	1,482	15,408	12,648	18.2	3,624
240-399	2,931	2,474	27.9	2,276	19,385	16,473	23.7	5,328
400-559	1,671	1,627	18.3	4,181	11,763	10,966	15.8	7,281
560-759	1,222	1,454	16.4	5,617	8,421	8,662	12.5	9,700
760-1,119	937	1,273	13.8	7,510	7,498	8,219	11.9	12,548
1,120-1,599	335	503	5.7	10,784	3,969	4,464	6.4	17,696
1,600-2,239	89	148	1.7	13,764	1,842	2,111	3.0	22,139
2,240-2,879	23	42	0.5	16,057	766	878	1.3	25,305
2,880 and up	24	47	0.5	19,937	1,426	1,577	2.3	40,782
TOTAL	8,955	8,868	100.0	4,741*	73,212	69,411	100.0	9,125*

* Average Sales, not total.

^{1/} D.B.S., special run.

Table 47 CHANGES IN CAPITAL PER FARM
WITH VALUES FOR LAND, MACHINERY AND LIVESTOCK ^{1/}
(1961-66; C.D. 15 and Alberta)

	C.D. 15		ALBERTA	
	<u>1961</u>	<u>1966</u>	<u>1961</u>	<u>1966</u>
1. Land and buildings	12,749	26,985	23,430	41,283
- \$ change	-	14,236	-	17,853
- % change	-	112	-	76
2. Machinery and equipment	6,343	10,074	7,524	11,310
- \$ change	-	3,731	-	3,786
- % change	-	59	-	56
3. Livestock and poultry	2,134	2,478	6,164	8,141
- \$ change	-	344	-	1,977
- % change	-	17	-	32
4. Total capital	21,226	39,537	37,118	60,118
- \$ change	-	18,311	-	23,616
- % change	-	86	-	64

The growth in capital values per farm was higher in C.D. 15 than for the province in general, 86% vs. 64% for the period 1961 to 1966. This is an encouraging sign in agricultural adjustment. The gain in farm capital values for C.D. 15 is largely due to the improvement in values of land and buildings. This component grew by 112% for C.D. 15 in the period 1961 to 1966, as compared with 76% for Alberta. Gains made in this component of farm values were reduced by comparatively slower growth of the livestock and poultry industry; 17% gain in C.D. 15 vs. 32% for Alberta.

^{1/} D.B.S.; 1966 Agriculture, Bulletin 5 and 5.3.

FARM CAPITAL BY SUBDIVISION
1966

Sub-Division	No. Of Farms	Total Farm Capital	Capital Per Farm	Land & Buildings	Value Per Farm	Machine & Equipment	Value Per Farm	Livestock & Poultry	Value Per Farm
I.D. 110	33	1,167,000	35,400	819,700	24,900	284,700	8,600	62,600	1,900
111	42	1,215,900	29,000	816,200	19,500	251,800	6,000	147,900	3,500
123	-	-	-	-	-	-	-	-	-
124	196	4,632,600	23,600	2,855,500	14,600	1,228,900	6,200	548,200	2,800
125	489	16,786,400	34,300	10,633,100	21,700	4,419,400	9,000	1,733,900	3,500
126	470	15,488,700	32,900	9,930,100	21,000	4,136,100	8,800	1,422,500	3,000
128	-	-	-	-	-	-	-	-	-
129 2/	8	188,000	23,500	89,500	11,200	38,700	4,800	59,800	7,500
130	925	36,168,600	39,100	24,208,000	26,200	10,864,500	11,800	1,096,100	1,800
131	424	14,570,700	34,400	9,972,800	23,500	3,812,100	9,000	785,800	1,900
132	601	26,260,300	43,700	17,784,100	29,600	7,265,300	12,100	1,210,900	2,000
133	292	14,918,100	51,000	10,388,800	35,600	3,795,900	13,000	733,400	2,500
134	864	30,105,800	34,800	21,005,200	24,300	8,116,900	9,400	983,700	1,100
135	327	16,167,000	49,400	10,988,500	33,600	3,995,000	12,200	1,183,500	3,600
136	344	21,511,600	62,500	15,635,500	45,500	4,831,800	14,000	1,044,300	2,400
138	829	26,411,900	31,900	17,678,400	21,300	7,107,700	8,600	1,625,800	2,000
139	878	28,895,200	32,900	19,576,000	22,300	7,426,900	8,500	1,892,300	2,100
144	-	-	-	-	-	-	-	-	-
145	3	113,000	37,700	63,000	21,000	42,900	14,300	7,100	2,300
146	50	1,696,000	33,900	998,300	20,000	592,700	11,800	105,000	2,100
147	245	5,812,500	23,700	3,710,300	15,000	1,490,700	6,100	611,500	2,500
148	-	-	-	-	-	-	-	-	-
149	-	-	-	-	-	-	-	-	-
County #1	1,824	88,082,400	48,300	61,873,600	34,000	19,539,000	10,700	6,669,800	3,600
I.R.	24	424,900	17,700	272,400	11,400	97,200	4,000	55,300	2,300
Total for C.D. 15	8,868	350,616,600	39,500	239,299,000	26,700	89,338,200	10,000	21,979,400	2,500
Total for Alta.	69,411	4,215,619,600	60,700	2,865,472,200	41,300	785,031,700	11,300	565,115,700	8,100
C.D. 15 as % of Alberta	13%	8%	65%	8%	65%	11%	88%	4%	31%

1/ Because numbers were rounded to the nearest 100, the total values per farm of land and buildings, machinery and equipment, livestock and poultry, may not equal capital per farm.

2/ Includes data for two farms in I.D. 128.

Figure 26 TOTAL CAPITAL VALUE PER FARM^{1/}
C.D. 15
(In Constant Dollars)

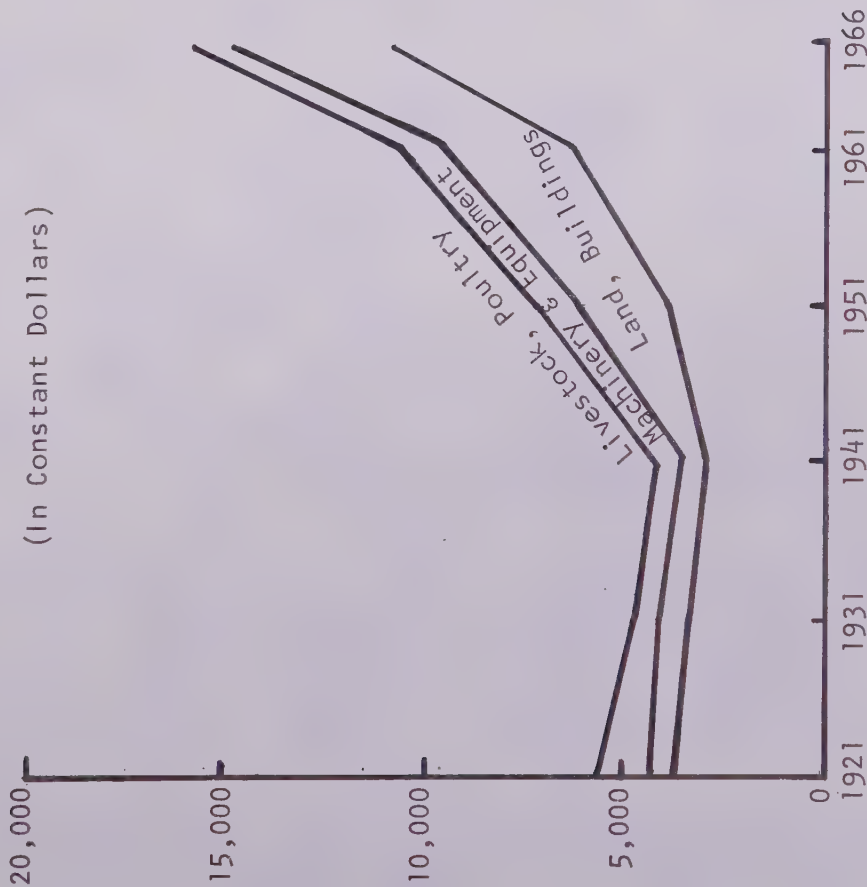
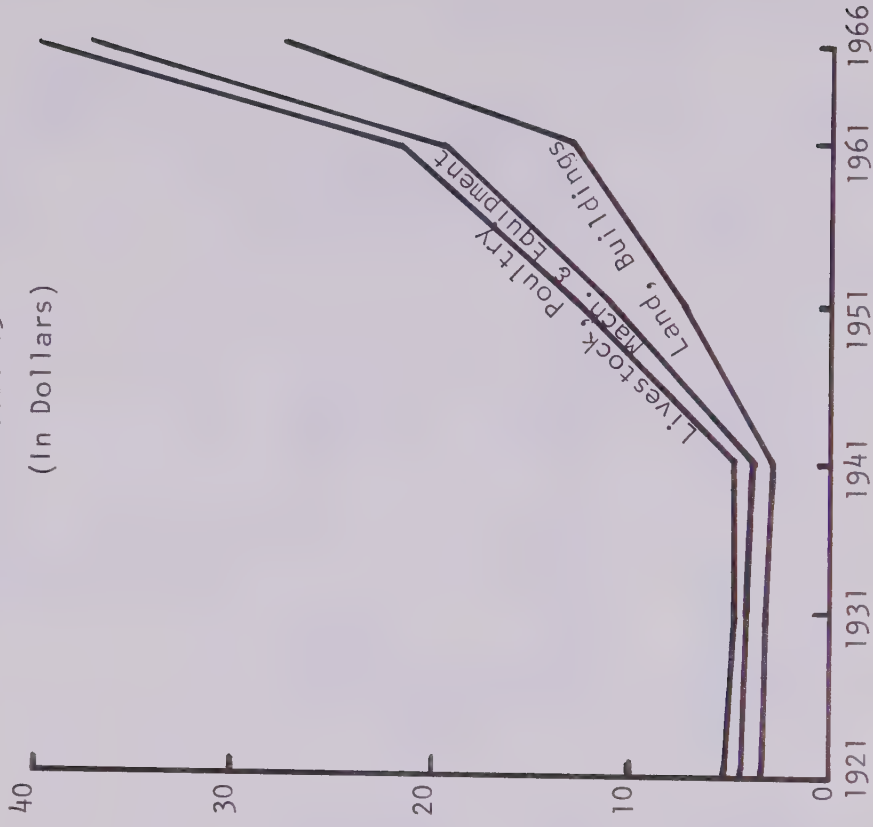


Figure 27 TOTAL CAPITAL VALUE PER FARM^{2/}
C.D. 15
(In Dollars)



1/ D.B.S.; Agriculture Census and National Accounts - Income and Expenditure, Cat. No. 13-502.

Since National Accounts used 1957 as the base period to arrive at 1961 and 1966 indices, these were adjusted to the 1949 base period.

2/ *ibid.*

Table 49

CAPITAL VALUES
1921-66 FOR ALL FARMS AND PER FARM^{1/}
C.D. 15

(1921 is used as a base period)

	Actual \$,000	Adjusted Values	
		Gross Deflated \$,000	Ave. Per Farm Deflated
1921			
Farms - No.	4,550	4,550	-
Total Capital Value	24,910	24,910	\$5,475
Land, Buildings	16,989	16,989	3,734
Machinery, Equip.	2,833	2,833	623
Livestock, Poultry	5,088	5,088	1,118
1931			
Farms - No.	10,168	10,168	-
Total Capital Value	43,462	47,808	\$4,701
Land, Buildings	31,703	34,873	3,429
Machinery, Equip.	7,051	7,756	1,763
Livestock, Poultry	4,709	5,180	1,509
1941			
Farms - No.	9,757	9,757	-
Total Capital Value	42,429	42,429	\$4,349
Land, Buildings	28,240	28,240	2,895
Machinery, Equip.	8,052	8,052	825
Livestock, Poultry	6,138	6,138	629
1951			
Farms - No.	9,492	9,492	-
Total Capital Value	114,944	68,966	\$7,269
Land, Buildings	65,535	39,321	4,144
Machinery, Equip.	35,029	21,017	2,215
Livestock, Poultry	14,380	8,628	909
1961			
Farms - No.	8,955	8,955	-
Total Capital Value	190,078	95,039	\$10,616
Land, Buildings	114,168	57,084	6,376
Machinery, Equip.	56,802	28,401	3,172
Livestock, Poultry	19,108	9,554	1,067
1966			
Farms - No.	8,868	8,868	-
Total Capital Value	350,617	140,247	\$15,820
Land, Buildings	239,299	95,720	10,797
Machinery, Equip.	89,338	35,735	4,031
Livestock, Poultry	21,979	8,792	992

^{1/} D.B.S. To arrive at constant dollars the following factors were used as presented on Page 36 of the National Income Accounts:

1921	1931	1941	1951	1961	1966
1	1.1	1.0	0.6	0.5	0.4

Figure 28

AVERAGE TOTAL CAPITAL VALUES PER FARM - 1966^{1/}

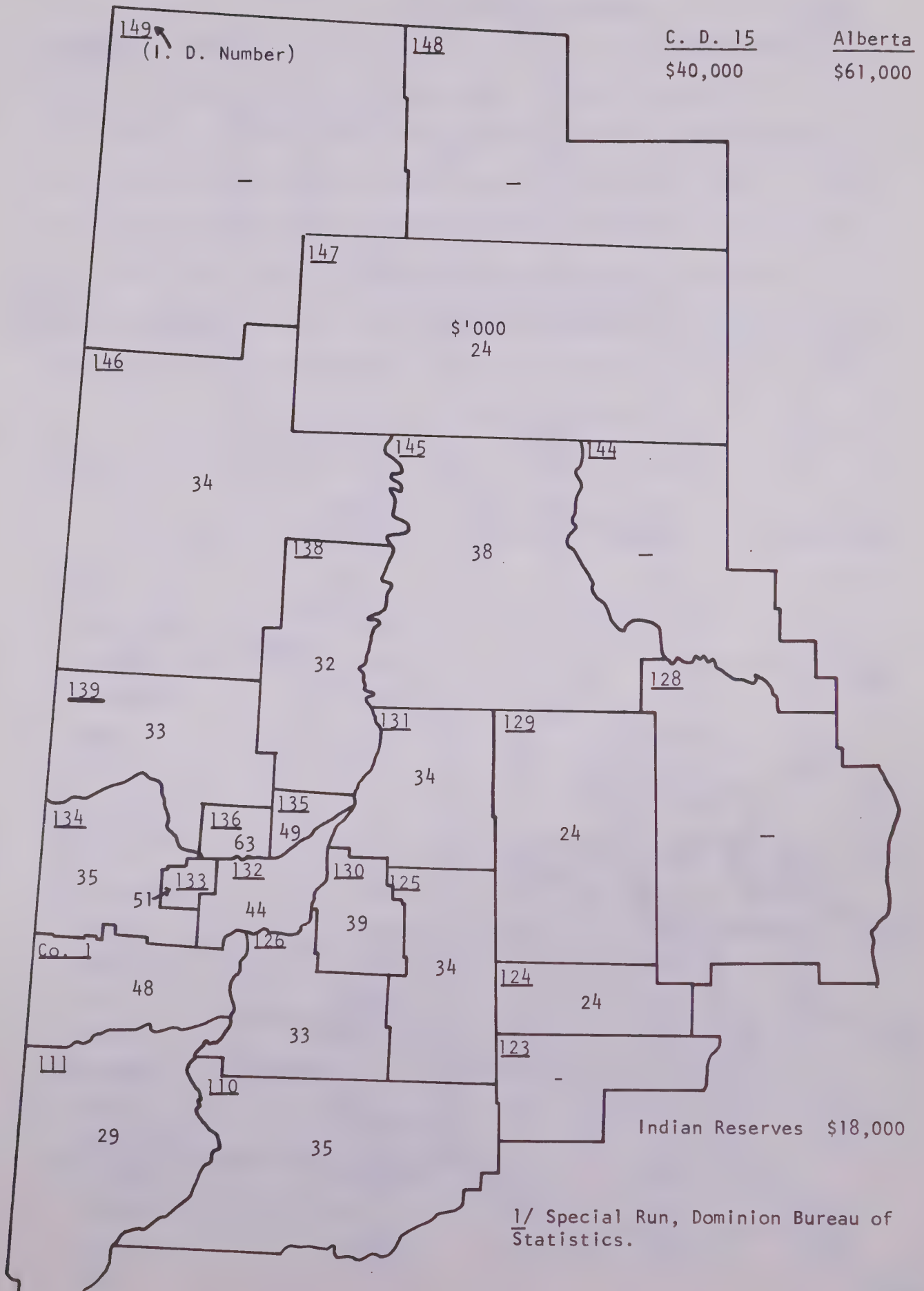
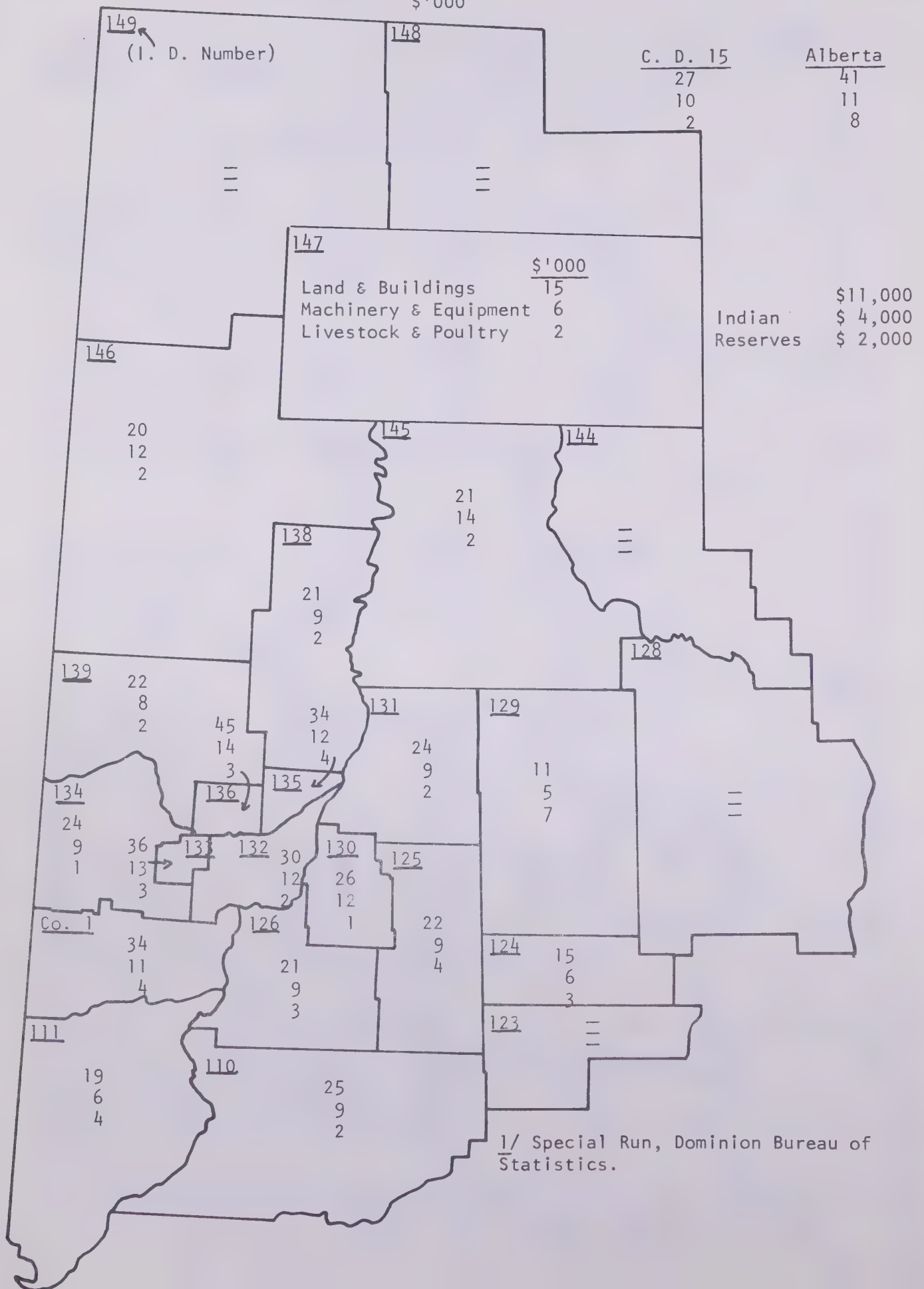


Figure 29

LAND, MACHINERY, LIVESTOCK

AVERAGE CAPITAL VALUES PER FARM - 1966 ^{1/}
\$'000



FARM CREDIT

Farm credit is of primary concern in agricultural development. A Survey conducted by the Rural Development Research Branch, in Census Division 12, in 1966 revealed that government sources provided most of the land credit and banks provided most of the machinery loans. (These may have been Farm Improvement Loans backed by the Federal Government: The kind of loans were not identified.) A summary of the sources of credit in Census Division 12 is tabulated below for the purpose of comparing farm credit use in Census Division 15 with the use of credit in C. D. 12.

Table 50 SOURCES OF FARM CREDIT IN C. D. 12 (1966)

	<u>Amount Loaned</u>	<u>No. of Loans</u>	<u>Average Loan</u>	<u>% of Total</u>
<u>Land</u>				
banks	\$ 17,902	10	\$ 1,790	3
government	462,800	57	8,119	78
private	16,500	5	3,300	3
finance co.	600	1	600	-
other	<u>97,255</u>	<u>25</u>	<u>3,890</u>	<u>16</u>
Total	\$595,057	98	\$ 6,072	100
<u>Buildings & Machinery</u>				
banks	\$199,251	75	\$ 5,053	54
government	14,650	3	12,325	4
private	1,000	1	1,000	-
finance co.	35,950	13	6,862	10
other	<u>117,650</u>	<u>42</u>	<u>7,021</u>	<u>32</u>
Total	\$368,501	134	\$ 2,750	100
<u>Livestock</u>				
banks	\$ 24,100	10	\$ 2,410	81
government	1,000	1	1,000	3
private	none	none	none	-
finance co.	none	none	none	-
other	<u>4,750</u>	<u>3</u>	<u>1,583</u>	<u>16</u>
Total	\$ 29,850	14	\$ 2,132	100

	<u>Amount Loaned</u>	<u>No. of Loans</u>	<u>Average Loan</u>	<u>% of Total</u>
<u>Operating Expenses</u>				
banks	\$ 13,950	9	\$ 1,550	31
government	none	none	none	-
private	1,500	3	500	3
finance co.	none	none	none	-
other	<u>30,112</u>	<u>53</u>	<u>568</u>	<u>66</u>
Total	\$ 45,512	65	\$ 701	100
<u>Personal & Household</u>				
bank	\$ 1,800	2	\$ 900	13
government	2,200	1	200	1
private	none	none	none	-
finance co.	1,400	1	1,400	10
other	<u>10,815</u>	<u>33</u>	<u>770</u>	<u>76</u>
Total	\$ 14,215	37	\$ 384	100
<u>Other</u>				
bank	none	none	none	-
government	\$ 2,369	1	\$ 2,369	13
private	450	1	450	3
finance co.	none	none	none	-
other	<u>14,634</u>	<u>19</u>	<u>770</u>	<u>84</u>
Total	\$ 17,453	21	\$ 831	100

The total amount of farm credit used by the 247 farmers in the survey was slightly over \$1,000,000. Seventy-eight farmers had no credit, while the average loan for the 169 farmers who had credit was \$6,307.

The Farm Credit Corporation accepts land as collateral in making loans. It is, therefore, likely that farmers in the survey listed under land loans, the portion F.C.C. loans which may have covered buildings, livestock, operating costs and debt consolidation. Provincially, 60% of F.C.C. loans go to finance land purchases.

The amount of farm credit owing by C. D. 15 farmers to two major

government loan agencies (Alberta Farm Purchase Board and Farm Credit Corporation) in 1967 amounted to \$34.6 million. The two agencies had 2,238 loans outstanding in 1967. The average loans from these sources was \$15,500. By comparison, the average farm loan extended from government sources to farmers in C. D. 12 as measured the farm survey in 1966 was \$6,000. This comparison in part, reflects the fact that the Peace River is a relatively new area requiring more money for development especially for land improvement. There may also be a difference in attitude on the part of farmers to the use of credit in farming operations. If it is assumed that of those 2,238 loans, one loan is granted per farm, then 25% of the farms in the census division have loans with either F.C.C. or A.F.P.B. This leaves 75% or 6,630 farms, some of which may have loans from friends, relatives, banks, and other financial agencies. The correlation of growth in net worth, which is one measure of farming success, to use of credit has not been established to date. It is, however, generally recognized that credit is important in achieving economically viable farm units.

Table 51

FARM CREDIT FOR C. D. 15 BY I. D.'s

FROM SELECTED AGENCIES ^{1/}

(1967)

<u>I. D.</u>	<u>No. Loans</u>	<u>Amount of Loans</u>
110	2	26,000
111	9	121,000
123	--	--
124	10	119,000
126	106	1,550,400
129	1	14,000
131	131	1,852,760
132	228	3,691,800
134	153	2,286,000
138	192	2,583,400
139	203	2,930,000
144	--	--
145	2	13,000
146	7	88,000
147	49	688,000
148	3	87,000
149	--	--
130	291	4,419,389
133	98	1,784,000
135	106	1,813,000
136	122	2,309,000
Gr. Pr. County #1	525	8,287,400
TOTAL	<u>2,238</u>	<u>\$34,662,000</u>

^{1/} Abstracted from records of the Farm Credit Corporation and Alberta Farm Purchase Board.

COMPARATIVE ECONOMIC AND EMPLOYMENT
CONTRIBUTIONS OF AGRICULTURE

A comparison of the economic contribution of agriculture to other sectors of the C.D. 15 economy reveals that the agricultural sector is the leading employer in C.D. 15. It is a distant second in terms of product dollars to that derived from sales of mining, oil, and oil products. Dollar sales in the latter industry comes primarily from the sales of oil and gas. One should keep in mind that the impact on the regional economy based on 'dollar sales' is not directly comparable. One dollar of oil sales does not have the same impact on the regional economy that is derived from one dollar of agricultural products sales. The primary reason for this is that agricultural operators are almost all residents of the area and are consumers of products sold by merchants in the area. The money derived from the sale of oil and oil products, on the other hand, goes to sources which are primarily non-resident. There are several direct benefits which accrue to the area from the oil and oil products industry. These show up as jobs in exploration and drilling activities, at gathering and jumping stations, as well as transportation of equipment and products; and in expenditures made on purchasing of right-of-ways into private property for exploration and development purposes.

On a provincial basis, when the demands for oil expands \$1, the total output of other industries expands 31¢. When the demand for agricultural products expands by \$1 the total output in other industries rises 36¢. But since one additional dollar expanded on oil and gas products causes a 12¢ expansion in wages and salaries compared to 10¢ in agriculture, the contribution of the two industries on the provincial basis is said to be

about equal.^{1/} No attempt is made in this report to analyze the input-output relationships of the two industries in C.D. 15. This is a complex study which merits separate consideration.

Table 52

GROSS SALES AND EMPLOYMENT
FOR PRIMARY INDUSTRIES - C.D. 15

	Sales in 1966	Labour Force in 1961 ^{2/}
Agriculture	42,000,000	10,325
Forestry	10,600,000	890
Mining, oil, and oil products	169,800,000	594
Fisheries, trapping and hunting ^{3/}	1,700,000	485
Tourism ^{4/}	1,500,000	200 ^{5/}
TOTAL	225,600,000	12,594

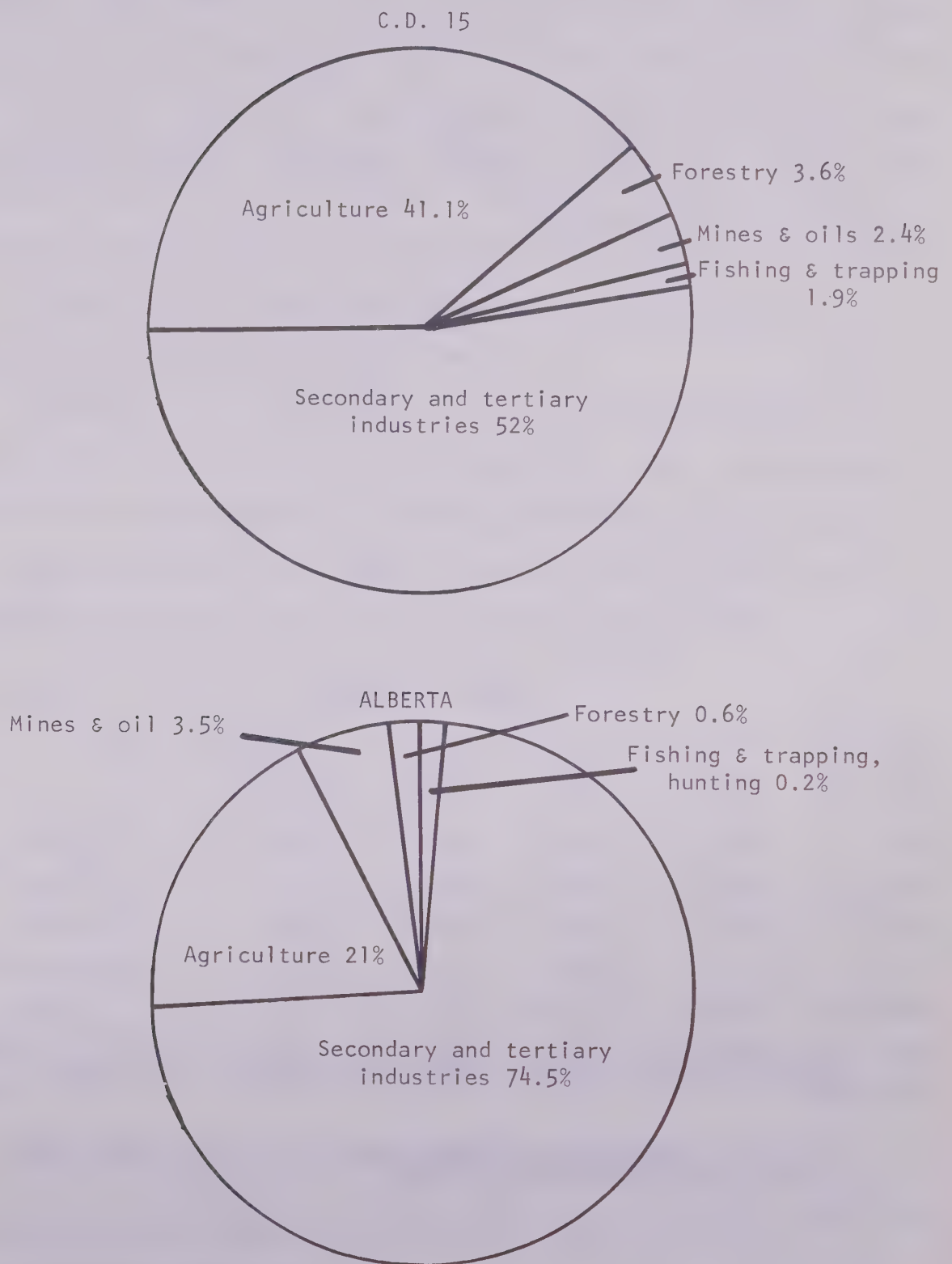
1/ Wright, R. W., The Alberta Economy, Department of Economics, University of Alberta, Calgary. p. 35.

2/ Labour force figures are not available for the primary sectors, with exception of agriculture for the more recent years than 1961.

3 & 4/ An estimate of income was made for these industries by Jerry F. Bigam, Economist, Rural Development Research Branch, Economics Division, Department of Agriculture. For tourism 15,000 parties visited C.D. 15 in 1966 according to a Department of Industry study, Survey and Analysis of Non-Resident Travel - 1967. They spent on the average 4.8 nights at the cost of \$19 per night or approximately \$100 per party. Hunting was estimated on the basis of \$150 per moose hunter. Using a success ratio of 40% there were 9,000 hunters in the province who harvested 3,600 moose. Nine thousand hunters spent \$1,350,000 in the province. See Alberta, a publication of the Department of Lands, Forests, Parks and Wildlife, Vol. 11, No. 1, Spring 1968, p. 37. It is assumed that approximately 40% of the moose hunters visited C.D. 15 and spent approximately \$500,000 in the area. The balance of the income is from fisheries and trapping.

5/ Estimate only. It was assumed that gross income from tourism per person employed in the tourist trade was \$7,500. The expenditure of \$1 1/2 million would thus provide 200 jobs.

Figure 30 PERCENTAGE OF EMPLOYMENT BY INDUSTRIES ^{1/}
IN C.D. 15 and ALBERTA



^{1/} D.B.S.; Labour Force, Occupations, Vol. 3.1-8, Ottawa, 1961 and Department of Agriculture data.

The ratio of primary to secondary and tertiary jobs in the agriculturally based C.D. 15 economy is approximately 1:1. This same ratio was found in agriculturally based C.D. 12^{1/}. On the provincial level, however, the ratio of primary to secondary jobs is 1:3. The total labour force in C.D. 15 in 1961 was 25,055^{2/}. Agriculture provided 10,325 jobs or 41% of the total employment.

1/ Janssen, V.T. et al; The B-12 Plan, Rural Development Research Branch, Economics Division, Department of Agriculture, Edmonton, 1968.

2/ D.B.S.; Labour Force, Occupations, Vol. 3.1-8, Ottawa, 1961 and Department of Agriculture data.

POSSIBLE AGRICULTURAL ADJUSTMENTS IN C.D. 15

If present trends continue, one may postulate the numbers of live-stock on farms in C.D. 15 at some future date, which for the purposes of this study was set at 1981. The projection of trends is hazardous since production techniques and marketing conditions change bringing re-alignment to the production patterns. Nonetheless, trends are useful in assessing expectations and in determining programs and projects which may be needed to alter undesirable conditions and to help bring about desirable developmental conditions.

In addition, livestock projections can be utilized in determining the possible land use in the future. Based on the labour which can be provided by a farm operator and assuming a moderate level of technology, one can arrive at the number of farm units which provide full employment to the operators. This process is discussed below:

Table 53

LIVESTOCK NUMBERS

	1951	1956	1961	1966	Projected for 1981
Dairy Cows ^{1/}	17,237	14,638	13,343	9,081	5,000
Beef Cows ^{2/}	9,171	31,559	44,746	59,046	90,000
Sow - numbers ^{3/}	6,000 ^{4/}	11,000 ^{4/}	13,000	8,000	15,000
- sow-pig ratio	1:8	1:8	1:8.8	1:7.5	-
Pig numbers ^{5/}	84,000	154,000	182,000	112,000	240,000
Sheep ^{6/}	6,533	11,010	20,071	11,367	10,000
Poultry (Hens)	138,187	179,978	163,631	128,605	100,000

^{1/} D.B.S., 1951-66.

^{2/} Estimated from total cattle numbers. Subtracted dairy stock and assumed that one-half of the animals in the herd were cows.

^{3/} D.B.S., 1961-66.

^{4/} Estimated on the basis of a 1:8 sow-pig ratio.

^{5/} Calculated on the basis of two farrowings per year and eight pigs per litter.

^{6/} D.B.S., 1951-66. Includes spring lambs.

Table 54

ANNUAL LIVESTOCK
FEED REQUIREMENTS

	Projected for 1981	
	Feed Grain Needs ^{5/}	Barley Equivalent
	Number	
Dairy Cows	5,000 @ 45 bu.	225,000
Cattle on Feed ^{1/}	45,000 @ 50 bu.	2,250,000
Other Cattle: cows	90,000	-
- replacements (20% of cows)	48,000 @ 10 bu.	180,000
- grass feed long-yearlings ^{2/}	35,000 @ 10 bu.	350,000
Pigs: sows	15,000 @ 25 bu.	375,000
- market hogs ^{3/}	240,000 @ 20 bu.	4,800,000
Sheep: ewes	5,000 @ 5 bu.	25,000
- lambs ^{4/} (feed requirement is listed jointly)	7,000	-
Poultry: hens	100,000 @ 2 bu.	200,000
TOTAL		8,405,000

^{1/} Cattle on feed are assumed to come from the calf crop raised on the farms in C.D. 15, with no significant amount of imports. The calf crop is assumed to be 90% producing 81,000 calves. Allowing 1,000 deaths leaves 80,000 calves. Based on current trends 45,000 may be expected to be fattened in feed lots by 1981.

^{2/} Balance of 80,000 calves produced, and which are not in the feed-lots, are assumed to be wintered and sold as long-yearlings from pasture.

^{3/} Calculated on the basis of two farrowings per year and eight pigs per litter.

^{4/} Calculated on the basis of a 150% lamb crop and 500 deaths after lambing.

^{5/} Feed grain allotments were as follows:
 Dairy cow (350# B.F.).....45 bu. of barley equivalent
 Beef cow..... 0
 Beef cattle in feed-lot.....50 bu. of barley equivalent
 (250# gain for long ylngs.)...
 Sows.....25 bu. of barley equivalent
 Market hog (225#).....20 bu. of barley equivalent
 Hen (200 eggs)..... 2 bu. of barley equivalent
 Ewe (150% lamb crop)..... 5 bu. of barley equivalent

Assuming the average yield of barley per acre will remain at the current level of 26 bushels per acre, 323,000 acres of barley will be required for feed purposes by 1981. Some of the feed will be in the form of oats. Due to fewer pounds per bushel and higher fibre content, one bushel of barley may be substituted with approximately 1 3/4 bushels of oats. The livestock population projected for 1981 would consume approximately 14,700,000 bushels of oats which at current average yields, (36 bu. per ac.) would require 408,000 acres of production.

The possible number of farm units based on 3,000 hours^{1/} of labour provided by one operator is calculated below.

Table 55 POSSIBLE NUMBER OF FARM UNITS IN C.D. 15
BY 1981

		Number of Farm Units Possible in 1981
Dairy Farms	$\frac{5,000}{30}$	167
Beef Farms	$\frac{90,000}{100}$	900
Beef Feeding	$\frac{45,000}{600}$	75
Hog Farms	$\frac{240,000}{600}$	400
Sheep Farms	$\frac{5,000}{1,000}$	5
Poultry Farms	$\frac{100,000}{3,000}$	34
Mink Farms ^{2/}		75
TOTAL LIVESTOCK FARMS		1,656

1/ It is estimated that a farm operator can provide 3,000 hours of labour annually (300 days @ 10 hrs.). Some families with older children can provide over 4,000 hours of family labour per year. Hence the size of the units can be greater than indicated resulting in fewer farms, particularly where a high level of technology is applied, using new and bigger equipment to expand farm operations.

2/ The calculation is based on the tullibee fish harvest in Lesser Slave Lake. It is possible to expand mink production to other lakes in C.D. 15 but the market is currently depressed and the number of mink operations is not expected to increase over the current figure.

Since the production of feed required to grow-out and fatten livestock is considered in the livestock calculations above, the acreage used for grain feed production is subtracted from the acreage which is expected to be in use by 1981 for total grain production. The feed grain acreage required was estimated at 323,000 acres of barley or 408,000 acres of oats. The estimated acreage needed would, thence, approximate 350,000 acres. Since hay and fodder are also expected to occupy 700,000 acres, this leaves approximately 2,000,000 acres for cash grain production.

The labour requirement, using a moderate level of technology, is 5.0 hours per crop acre. One operator could, therefore, farm 600 acres of crop land. Assuming a full-time crop operation there could be 3,333 grain farms in C.D. 15 $\left(\frac{2,000,000}{600} = 3,333 \right)$.

Table 56 TOTAL FARM UNITS POSSIBLE IN C.D. 15 BY 1981
(Based on Full Employment of Labour)

Livestock Farms.....	1,656
Crop Farms.....	3,333
<u>TOTAL</u>	<u>4,989</u>

In 1966 there were 8,868 farms, of which 4,224 were commercial farms (those with farm sales over \$2,500 annually). It is unlikely that approximately 4,000 of the total census farms will cease operation by 1981. Traditionally, there have been families who have preferred to remain on farm units even if these farm units could not achieve economic viability and provide \$3,000 or more for family labour return, a benchmark used by people working in the underdeveloped areas. In addition, since this is a relatively new and developing area, many farm units will remain to be trial operations for people working in other occupations as well as for some who will attempt to make a success of farming

by giving it "a try". Because part-time and full-time underemployed farm units are expected to continue in the area, it is estimated that there will be approximately 7,500 farms in C.D. 15 in 1981.

Nonetheless, the seriousness of the adjustment problem is evident. In 1966 there were 8,868 farm units. With increased crop acreage foreseen for 1981 and using current technology at moderate levels it is possible that only 5,000 farm units would operate in C.D. 15 with full labour employment by 1981. From 1956 to 1966, 695 farm units disappeared in spite of new farms which were established in the area. It is likely that in the period 1966-81 approximately 1,300 farm units will disappear, leaving approximately 7,500 farms. This rate of disappearance points to a serious adjustment problem. If greater equilibrium is to be achieved in agriculture, it is necessary to accelerate formation of economically viable farm units which provide full employment to farm operators. Farm consolidation, credit policies, farm and home management consulting, and other programs may be employed to achieve greater equilibrium.

Since dislocations in the agricultural sector are reflections of internal as well as external economic forces over which farm families have little or no control, those farm families leaving agriculture should be financially assisted if they desire to change to other occupations. Some of the programs which can be employed to assist those considering closing their agriculture operations are:

1. Counseling services which inform about alternative employment possibilities
2. Training and retraining assistance
3. Relocation assistance

4. Early retirement
5. Labour inventories
6. Job formation incentives to promote economically feasible
industries in the area
7. Others

PRIMARY INDUSTRIES IN C. D. 15

by

J. F. Bigam

INTRODUCTION

The first economic base of the Peace River area ^{1/} was the fur trade. Before the turn of the century and even for some time beyond, the sparse population was able to earn a livelihood from fur trapping and related activities. About 1915 the settlers began to arrive in the area, and occupied the most fertile land. For the last fifty years and probably for some time to come, agriculture has been and will likely continue to be, the economic base in the region.

More recently, however, trends toward industrialization are becoming evident. The forest industry has become a major contributor to the economy, providing payrolls, purchasing services and justifying expansion in transportation facilities. It is an industry which is growing quickly and may well expand to double its production in the foreseeable future. The location of forest-related manufacturing firms in the Peace area is a distinct possibility. One pulp and paper mill will likely locate there; the supply of raw materials could support more mills.

The oil industry has contributed a considerable amount to the area's economy in the past. An area, east of Peace River, holds the promise for future discoveries so that exploration activity is likely to continue for several years and the oil industry should, therefore, continue to be a major contributor to the area's economy. Mining developments, as well, show some promise, particularly the possibility of a location of an ore concentrator in the Clear Hills iron deposits. This development would depend on markets and conditions in the highly industrialized east and elsewhere.

Accelerated industrialization and urbanization will result in a larger

^{1/} In this publication, the Peace River area is synonymous with C. D. 15.

demand for recreational facilities. An improved transportation system along with abundance of fish and wildlife is likely to result in an expanded tourist trade. People vary widely in their concepts of what constitutes scenic beauty but there is general agreement among visitors that the Peace is one of the most beautiful areas in the world and it is yet largely unspoiled.

The commercial fishing and trapping industries, with better management than in the past and more efficient methods could become viable again. Although these industries will never again enjoy their past prominence, they should provide an adequate income for a few people or supplement the income of many. In any event, if restored, these industries would contribute to the economic diversity of the area.

FORESTRY AND FOREST INDUSTRIES^{1/}

C. D. 15, Alberta's largest census division, encompasses an area of roughly 94,000 square miles of which about 10% is farm land, 40% is forested land, 20% is potential forest land and 30% is a mixture of bushland, water and muskeg. Three forests, the Peace, Footner and Grande Prairie, are located within the boundaries of C. D. 15. Of the forests in C. D. 15, most of the Slave Lake Forest lies within C. D. 15 boundaries, small portions of the Lac La Biche, Athabasca, Edson, and Whitecourt Forests are also included.

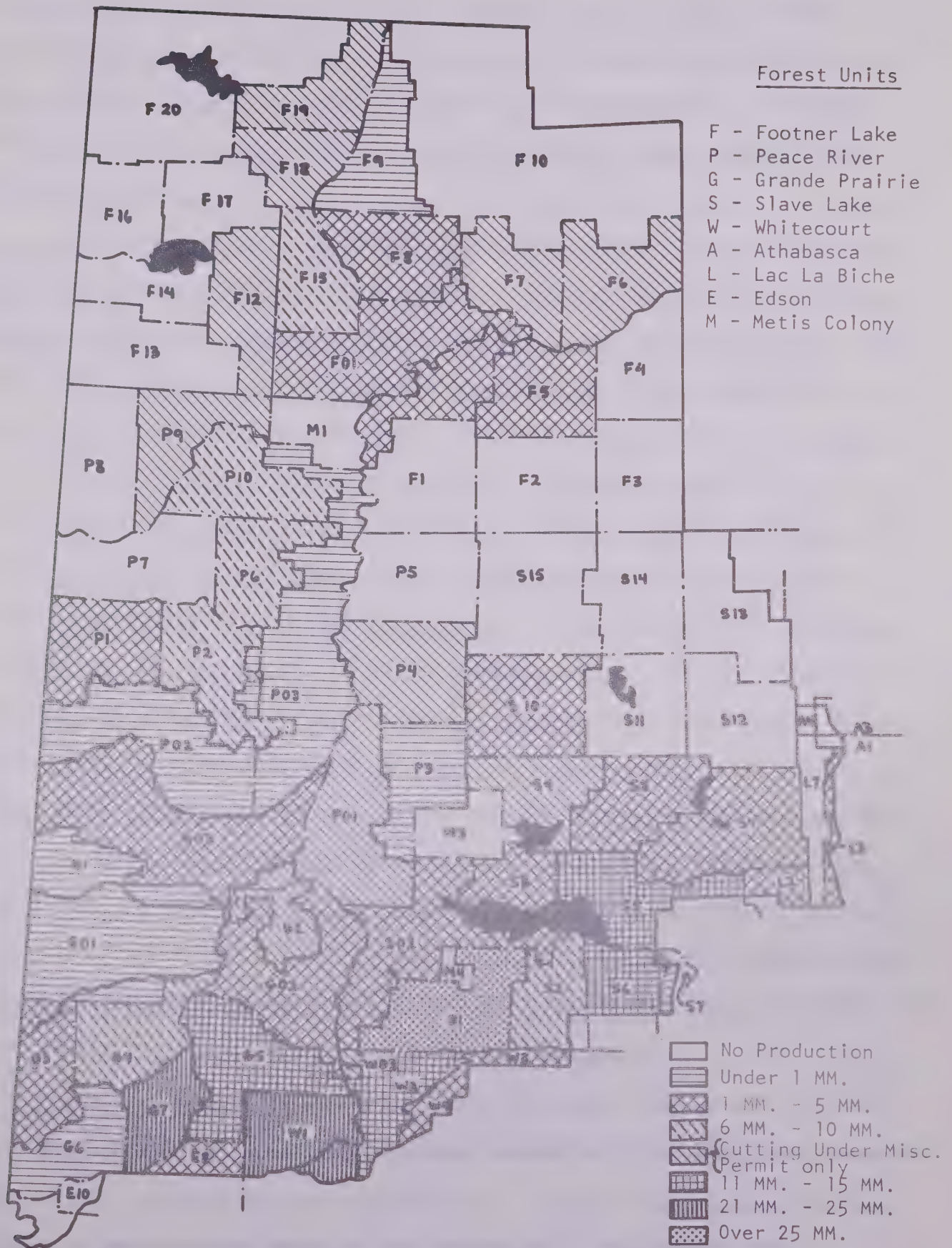
Development of the Industry

The development of the forest industry in most of C. D. 15 began with the construction of the Northern Alberta Railway^{2/} along Lesser Slave Lake from 1911 to 1915. Railway construction created (1) a demand for railroad ties, (2) a transportation route for lumber exports (3) and an influx of new settlers who required lumber for local construction. The growth of the timber industry paralleled the extension of the railway so that by the late 1930's timber operations were carried on in what are presently the Slave Lake, Grande Prairie, and Peace River Forests. During this same period, rail pushed into the Whitecourt region (1920's) and lumbering activity began there as well. Little development occurred in what is now the Footner Lake Forest until 1963, at which time the Great Slave Lake Railway opened up that area. The railways, then, have been the vehicle for the part of growth of the forest industry and indeed, the recently completed Alberta Resources Railway will be instrumental in establishing a pulp and paper industry in C. D. 15.

^{1/} For a more detailed treatment, see Bigam, J. F.; Industry & Resources in Alberta's C. D. 15, Rural Development Research Branch, Economics Division, Alberta Department of Agriculture, Edmonton, 1968.

^{2/} At that time called Edmonton, Dunvegan and B.C. Railway.

Figure 1 AVERAGE ANNUAL TIMBER PRODUCTION IN C. D. 15^{1/}



^{1/} Forest Management Section; Forest Resources and Timber Production in Census Division 15, Alberta Dept. of Lands and Forests, Edmonton, 1968. (unpublished)

Until the last six years, almost all of the sawmills were portable and were generally moved every fall to where the logging berths were located. At these mills, the logs were rough-sawn and then trucked out of the bush to planermills which were located at railway sidings. From here the finished lumber was shipped to both Alberta and export markets. In some instances, small planers were located alongside the bush sawmills and the finished lumber was either trucked to a railhead or directly to a local market. The last few years have seen changes in both logging and sawing methods. The major change was the introduction of wheeled skidders in the place of caterpillars for skidding. In earlier years the 'cats' skidded freshly fallen timber short distances to a roadside landing. The logs were then skidded by an arch rib truck^{1/} to the bush sawmills. When the skidding distance of the arch rib trucks became too great, the sawmill was moved closer to the cutting operations. This method is still practiced by many of the smaller lumber companies in C. D. 15. The wheeled skidder has an advantage over the 'cat' method in that loads can be skidded much more quickly over the rough terrain and therefore, it becomes possible to skid the logs over longer distances. This improved method coupled with the introduction of fork loaders and large trucks has severed the distance relationship between the bush sawmill and its proximity to the logging areas. This logging change has occurred partly as a result of the developments in sawmill operation.

Rising labour and equipment costs have necessitated increased utilization of logs. This in turn requires more sophisticated and expensive machinery which, as it turns out, requires a fairly permanent mill location. Also, many mill owners found it difficult to get skilled labour to work in bush

^{1/} A standard one ton truck (or larger) with a tripod boom in place of a box.

camps. The result has been that large, permanent sawmills have been and are being built. The technological improvements in logging have complemented these changes in sawmills. When the sawmill becomes permanent, it becomes beneficial to locate the planer close to the sawmill to form an integrated production line.

The above summarizes the recent technological developments. But the question arises, "What has happened to the labour force?". In the earlier stage, logging operations were almost exclusively carried on during the winter. Each days logging cut satisfied the daily sawmill requirements and built up a small inventory. Once the spring thaw began, logging operations shut down, ending the work for the logging crews. The sawmill operated for a short period to clean up any log inventories. The rough lumber was air dried for two months and then planed, possibly by the original employees of the sawmill. Usually there was a three to four month wait between the end of planing and the start-up of the logging season. The centralized mill of to-day requires large log inventories in order to keep operating for most of the year. Year-round operations are desirable to hold skilled employees. The total number of men necessary to log a given volume has not changed. However, there have been functional changes in jobs. That is, where previously a man ran a 'cat' for skidding, he is now operating a loader or a wheeled skidder.^{1/} The major changes have occurred (and will occur) in the sawmills and planer mills because their operating seasons have been extended and additional employment has been generated.

Structure and Development

Historical developments have created some definite differences in the size and number of logging and sawing operations. The following table shows the degree of ownership and concentration of coniferous logging quotas:

^{1/} A 'cat skinner' who previously skidded logs would operate a loader instead e.g.

Table 1 NUMBER OF COMPANIES OR INDIVIDUALS OWNING
CONIFEROUS QUOTAS - C. D. 15 - 1968

Quota Cut (M fbm)	FOREST					
	Footner Lake	Grande Prairie	Peace River	Slave Lake	White- Court	Lac La Biche
1,000	1			3	6	3
1,000 - 2,000	-	-	1	4	6	-
3,000 - 5,000	1		1	6	1	1
6,000 - 7,000	1	-	2	2	1	-
8,000 - 10,000	1	-	1	1	1	-
11,000 - 15,000	1	-	-	-	1	-
16,000 - 20,000	-	-	-	1	-	-
20,000 - 30,000	1	1	1	1	-	-
30,000	1	1	-	-	-	-
TOTAL QUOTAS VOLUME (M fbm)	97.7	78.1 ^{1/}	53.7	99.7 ^{2/}	51.5 ^{2/}	5.4

The table indicates that the Slave Lake and Whitecourt Forests have the largest number of small operations. On the other hand, the Grande Prairie and Footner Lake Forests have a few operators who hold large blocks of timber. Two different reasons account for the larger holdings in the Footner and Grande Prairie Forests. In the Grande Prairie Forest, consolidation of smaller holdings has been a strong trend since the late 1950's, due mainly to the presence of North Canadian Forest Industries. Also, vast quantities of timber which were not

^{1/} Includes N.C.F.I. Lease Area.

^{2/} Includes Quota Cuts in M.B.P.R. Lease and Reserve Areas.

classed as mature until the late 1950's and lack of access prevented development of mature stands. The Footner Forest is in the first stage of development because the railway only recently reached the area. The far north location and a forest policy which is in favour of larger, more efficient mills in this area have contributed to the large-scale operations. The smaller operations in Slave Lake, Whitecourt and Lac La Biche Forests arose because access to much of the forested areas has been relatively good for a number of years and small operators have not needed to undertake any large expenditures on access roads. The Edmonton and local markets could readily be supplied by road, and a rail line was nearby if export shipments were to be made. Thus some of the costs necessary in the more northerly regions were not incurred.

In the long-run it is likely that the kind of concentration found in the Grande Prairie and Footner Lake is preferable to the smaller operations in the other four forest areas. Because the Alberta lumber industry depends on the export market where competition from other lumbering areas in the world is intense, a strong marketing organization is necessary to ensure that the Alberta product can be sold, particularly during period when the lumber market is depressed. Only large, integrated companies can afford this marketing overhead. As previously noted, the larger centralized mills are in a position to offer either year-round work or nearly full-year employment. This appears desirable to ensure that manpower requirements, necessary for a healthy industry, can be maintained. It may alleviate the shifts out of the forest and forest-related industries during the 1965 Rainbow Lake oil play. In addition, the larger companies are in a better position to implement the newest logging techniques which would keep Alberta production competitive. One other advantage of larger companies is that they are better-able to undertake new manufacturing operations such as plywood, chipboard, pressedboard, or box mills than are small operators.

The table below presents the timber production statistics for C. D. 15 for past years:

Table 2 TIMBER PRODUCTION IN C. D. 15^{1/}
1954-1967

Fiscal Year	Production Mfbm	Fiscal Year	Production Mfbm
1954-55	Average of 197,300	1961-62	218,744
1955-56		1962	221,165
1956		1963	296,634
1957		1964	256,894
1958		1965	237,503
1959		1966	285,724
1960-61	161,983		

The previous table indicated the fluctuations in timber output over the past 14 years. It is evident that production during some years in the 1950's was greater than present levels. This represented an overcutting of timber in some of the more southerly areas of C. D. 15. The potential cut for these areas will not be reached for many years, not until regeneration stocks the stands again. These fluctuations can be associated with employment so it is apparent that a fluctuating employment level existed. From 1963 to 1965, it seems likely that the number of seasonal jobs decreased by 20%. As noted previously, many of the people in this part of the forest industry's labour force worked in the oil fields.

^{1/} See appendix for production by Forest.

The table below indicates the present level of utilization of the forests in C.D. 15:

Table 3
TIMBER PRODUCTION AND POTENTIAL^{1/}
BY FOREST CONIFEROUS SPECIES-1968

Forest	Projected Quota Cut 10" + D.B.H.	Quotas Presently Assigned - 1968	Timber ^{2/} Production 1967-68
← M I L L I O N S →			
Footner Lake	120.0	97.7	31.0
Peace River	53.5	53.5	26.1
Slave Lake	115.4	99.5	65.2
Grande Prairie	78.0 ^{3/}	78.0	75.7
Whitecourt	24.2 ^{4/}	24.2	41.3
Lac La Biche	5.4	5.4	1.1
Athabasca	-	-	-
Edson	-	-	-
TOTALS	402.8	358.6	240.4

Increased output will occur in the Peace River and Slave Lake Forests within the next two to three years. However, the greatest production increase will arise from the Footner Lake Forest. These increases will occur in coniferous sawlog production. The anticipated pulp mill construction within the next five years will result in enormous increases in production in the Grande Prairie Forest and those portions of the Whitecourt and Slave Lake Forests in C.D. 15 which are in the pulp lease and reserve areas. As well, the construction of a pulp mill in the Grande Prairie Forest would make 20 to 30 million fbm per year available to the sawlog industry under the terms of the Lease agreement.

^{1/} Potential excludes Pulp Mill Operations and Poplar Quotas.

^{2/} Refers only to production from quotas and not from miscellaneous permits.

^{3/} Includes NCFI Lease Area of 46.4MM fbm.

^{4/} In 1968-69 quotas in the M.B.P.R. lease and reserve areas were increased from 35MM fbm to 44MM fbm because of the delay in construction of the mill. However, these will decrease when the mill is built. The quotas do not include this adjustment.

Location of the Industry

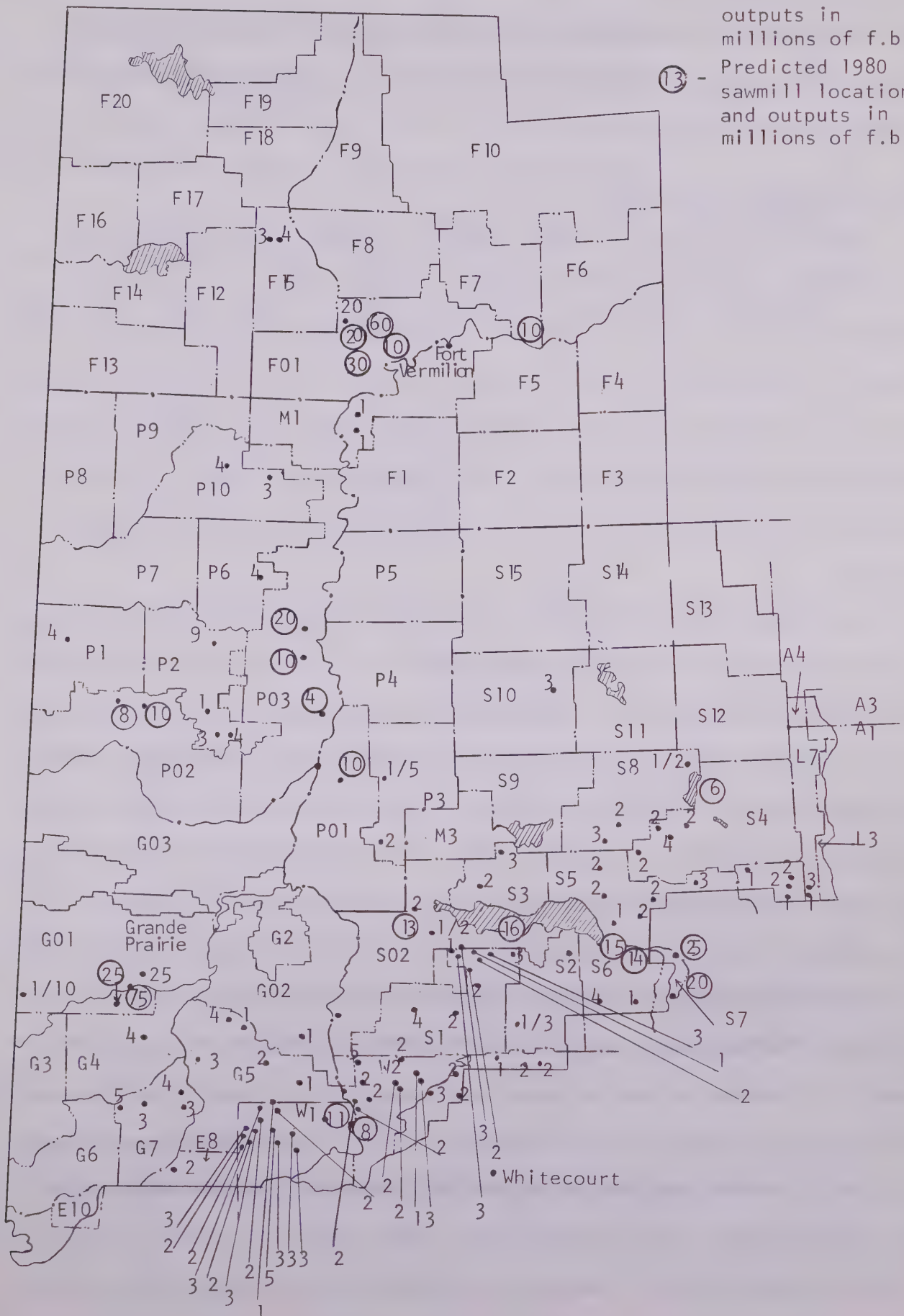
The following map shows the location of sawmills and planermills during the 1965-66 logging season. It is evident that many small mills were operating in the southern portion of C. D. 15. Each of these contributed to income payments in the surrounding communities. As indicated above, the present trends in the logging and sawing-planing sectors will exert substantial influences on existing towns and villages.

The map (Page 212) suggests the possible locations for the centralized sawmillplaner mill operations in the future. These towns will become relative growth points since they will provide a stable industry and a fairly reliable income flow to the community. At the present time there are a large number of small mills, (either bush mills or semi-permanent) located in or near many of the towns and villages and they provide income to people in the immediate area. As the trend toward larger mills progresses, these small mills will be consolidated at central locations where the income effects will be concentrated. Rather than having forest payrolls dispersed throughout C. D. 15, these payments and purchases will be concentrated in the mill towns. It is possible that some of the locations on the map will prove to be inaccurate over the next ten years since the assumption used in determining them was that of minimizing transportation costs which form a high percentage (37%) of total logging costs. The final determinant of mill location is often the owner's preference for a particular town, his estimation of the quality of the labour force, or some other subjective evaluation. However, even if some of the locations prove to be inaccurate, the important point to note is the relatively few number of mills and, therefore, a small number of towns or areas will be supported by these mills. This has important implications in considering the effects on existing towns and villages. If present mills are to be consolidated and no other industry replaces them, the economic reason for the communities existence diminishes. If at the

Figure 2

SAWMILL SITES IN C.D. 15

- 3 - 1966-67 sawmill locations and outputs in millions of f.b.m.
- ⑬ - Predicted 1980 sawmill locations and outputs in millions of f.b.m.



same time the centre is becoming less important to the farming community because of changing trade patterns then that centre may find itself with no economic basis for existence.

Other Anticipated Developments

Mention has already been made regarding movement toward centralized mills as well as the likely construction of a pulp mill in C. D. 15, and one bordering C. D. 15. The pulp mill constructions will reinforce the larger mill trend since a demand for pulp chips will be created. The larger mills could readily install the necessary equipment to chip the waste products and much more efficient use of the timber resource would result. In the process, three or four additional jobs per sawmill would be created in some of the mills.

A good deal of work has gone into attempts to develop a use for the huge poplar inventories in Alberta and particularly C. D. 15. An economic feasibility study was completed in 1968 which indicated that production of certain poplar products from the Slave Lake area forests would be profitable. Efforts are being made now to attract a company with sufficient capital and know-how to build the plant. Yearly poplar requirements would be 45,000 cords. Compare with this, the estimated annual poplar potential of two million cords in C. D. 15 and the tremendous potential for future resource development is obvious.

The establishment of more all weather roads throughout C. D. 15 is inevitable. The Department of Lands and Forests is currently carrying on a program of improved access to remote areas and this has been primarily responsible for some of the newest logging operations. It is likely that the anticipated pulp mill will construct and/or extend the present all-weather road system in the Grande Prairie Forest to ensure year round logging operations. Again, as the mills increase in size, it becomes more feasible for the companies to do their

own road upgrading because this reduces their inventory costs of the logs.

There are still large areas and substantial volumes of timber which cannot be developed because of limited or non-existent access. Over the next ten years, roads will open up these tracts of land and the road system will resemble the illustration on the following page.

The map indicates the large number of roads which the Department of Lands and Forests feel are necessary for fire control and access to timber stands. The summary of these mileages by forest is as follows:^{1/}

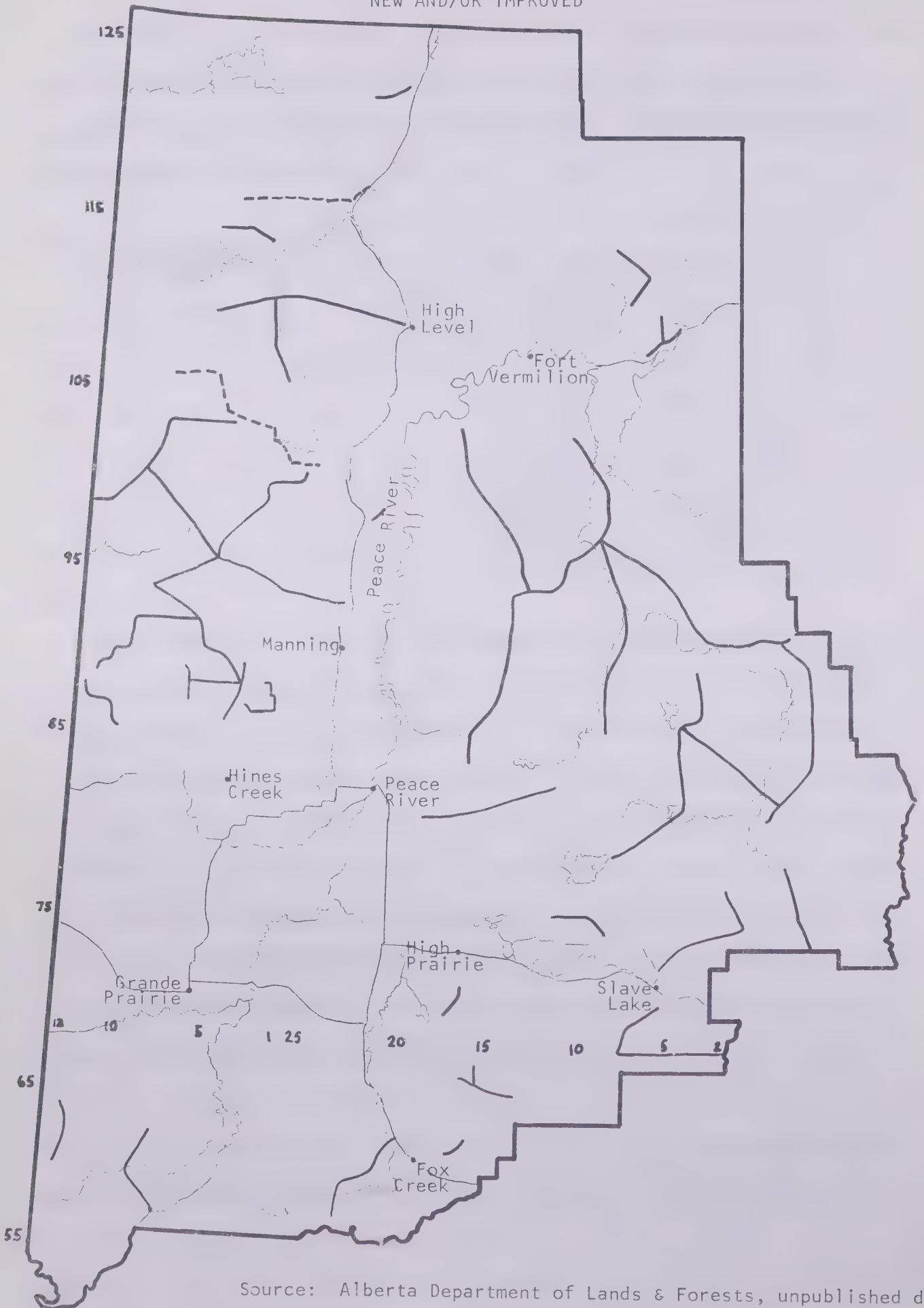
Lac La Biche	- 10 miles
Edson	- NIL
Grande Prairie	- 25 miles
Footner Lake	- 243 miles
Peace River	- 562 miles
Slave Lake	- 645 miles
Whitecourt	- <u>45 miles</u>
TOTAL for C.D. 15	- <u>1,530 miles</u>

At the present time, the Alberta Forest Service is building some of these roads, e.g. the Wadlin Lake road, which totals around 150 miles is in various stages of completion. At the same time oil companies are building roads which will suit forestry's purposes very well. However, it will be many years before even the majority of these roads will be completed at the present rate of construction. The problem, therefore, is finding funds to expand this program. It required a policy decision as to the importance of resource development versus other spending needs. If lumber markets remain anywhere near the present levels then many stands which now are too far from rail will become economic if access can be provided.

^{1/} Department of Lands and Forests, various personal communications.

Figure 2a

FORESTRY ROADS REQUIRED
NEW AND/OR IMPROVED



Source: Alberta Department of Lands & Forests, unpublished data.

One measure which should be implemented, is a cost-benefit analysis of access road construction. From this type of study, it would be possible to determine what annual payments should be applied to the timber harvest to cover the cost of access. In essence, the government would build the road and industry would pay for all or part of it over a fairly long period of time.

A problem which has existed and persists at present is that of adequate financing of lumber operations.^{1/} Many quotas are too small to support modern logging and mill equipment. At the same time, prices were depressed from 1963 to 1968. There was, therefore, little opportunity to heavy capital improvements, especially for the smaller quota holders. Many of the larger quotas are owned by wholesale or retail sales companies. They, in turn, contract out to logging and milling companies. Two problems emerge from this procedure: Firstly, competition among contractors for the logging and milling contracts has been fairly strong since machinery may otherwise lie idle during the winter; secondly, yearly renewals are not guaranteed so it is very risky to invest in new equipment. In instances where large companies own and operate their own quotas, this has led to a higher degree of mechanization and therefore efficiency.

It is evident that the small quotas and the contracting arrangements have contributed to the lack of accumulation of modern equipment on a large scale. With most of the readily accessible timber stands already sold, only those with poor access and long distances to rail

^{1/} Abstracted from personal communications from members of the Alberta Forest Service.

are available. These stands should, therefore, be sold in large blocks, where possible, to ensure that a large output is available to support modern equipment. For, if the newest forms and techniques are not used, the efficiency level may not be high enough to support the additional transportation costs. In times of falling prices these firms must have similar margins to work on as have other firms which have more favorable locations.

One uncertainty in the Alberta timber industry is the implications of the changing technology. For the industry to remain healthy, improvements must be constantly introduced. One improvement which will be definitely introduced is the installation of new sawing equipment which recovers about 20% more usable lumber than the present mill average. Another will be the use of more high speed planers. Other machines such as tree harvesters and tree shears do not offer the same obvious applications. From preliminary operations in Alberta, uncertainties have arisen with regard to how profitable these machines are for the particular terrain, type of stands and climate conditions of northern Alberta. Should they be introduced, manpower requirements in logging would be reduced by as much as 50% over conventional methods.

Mention should be made of the problems of boundaries used in this section. C.D. 15 is the area under study in this report but the influences of the logging and sawing operations do not adhere to this boundary. For example, centralized mills at Smith and Chisholm Mills,^{1/} which are just to the east of C.D. 15, draw large quantities of timber from within the census division. However, since most of the hiring is done from these locations and most of the employees live in the immediate areas, most of the economic impact will be felt outside C.D. 15. The same situation will likely hold for the anticipated pulp mill near Whitecourt.

Manpower Adjustments

A problem of manpower adjustment will occur over the next ten years.

^{1/} In 1968 disastrous fires wiped out a major portion of the timber supply for the mill at Chisholm. The operation will gradually be phased out during the next few years.

Presently, most of the labour force in the mills and the logging berths is employed from four to six months during the winter and spring. The trend towards the whole log centralized mills will provide increasing numbers of full-time jobs. An estimated minimum of 50% of the present labour force operate farms during the summer and the two occupations are complementary. It is likely that many of the farmers will be faced with a decision: continue farming or take full-time jobs in the mills. However, there will still remain the logging jobs during the winter for some. It remains to be seen how the manpower situation will evolve. If a large number of the people prefer to farm, there will be a shortage of skilled millwrights and other mill occupations and, therefore, a good demand for qualified employees.

Under this same heading there is also the question of physical mobility of many of the present workers. As the smaller mills are phased out, the opportunity and the means to move to the new locations should be provided for the employees. This involves, both good information on job opportunities and a knowledge of the ways of obtaining moving assistance.

Manpower Requirements

The following manpower requirements are estimates based on the present high degree of production efficiency and anticipated equipment improvements. The estimates refer to the forest industry and the sawing and planing operations which, in a strict sense, are included in the manufacturing industry. Two estimates are presented: (1) number of employees and (2) man-year equivalents. The former estimate shows how many people will actually be involved for at least some part of the year while the latter value is an indication of the number of employees who could find year-round work if weather and access conditions permitted summer operations. In the logging sector it is anticipated that winter logging will still be the rule except perhaps in the pulp operations. However, the sawing and planing operations will gradually extend to almost year-round work.

Table 4 MANPOWER ESTIMATES IN FORESTRY AND THE FOREST
MANUFACTURING SECTOR - C.D. 15
1966-67 and 1980-81

	No. of Employees		Man-Year ^{2/} Equivalents	
	1966-67	1980-81	1966-67	1980-81
<u>Forestry</u>				
Sawlog Logging	1,002 ^{1/}	1,554	400	622
Pulpwood Logging	-	900	-	360
Logging Administration	63	98	63	98
Gov't Forestry Personnel	172	222	172	222
Other Forestry Personnel	50 ^{1/}	70 ^{1/}	20	28
TOTAL	1,287	2,844	655	1,330
<u>Forest-Related Manufacturing</u>				
Sawing	842	309 ^{2/}	340	309
Planing	480	395 ^{3/}	190	223
Pulp Mill	-	496	-	496
Other Wood Industries	-	450	-	450
TOTAL	1,322	1,650	530	1,478
TOTAL EMPLOYMENT IN FORESTRY & MANUFACTURING	2,609	4,494	1,185	2,808

^{1/} for 100 day logging season

^{2/} for 250 working days

^{3/} made up of 140 year round and 255 for six months.

It is evident that a large expansion in manpower requirements will occur up to 1980. The actual number of people involved will increase 75% while the amount of man-year equivalent employment will increase by almost one and a half times.

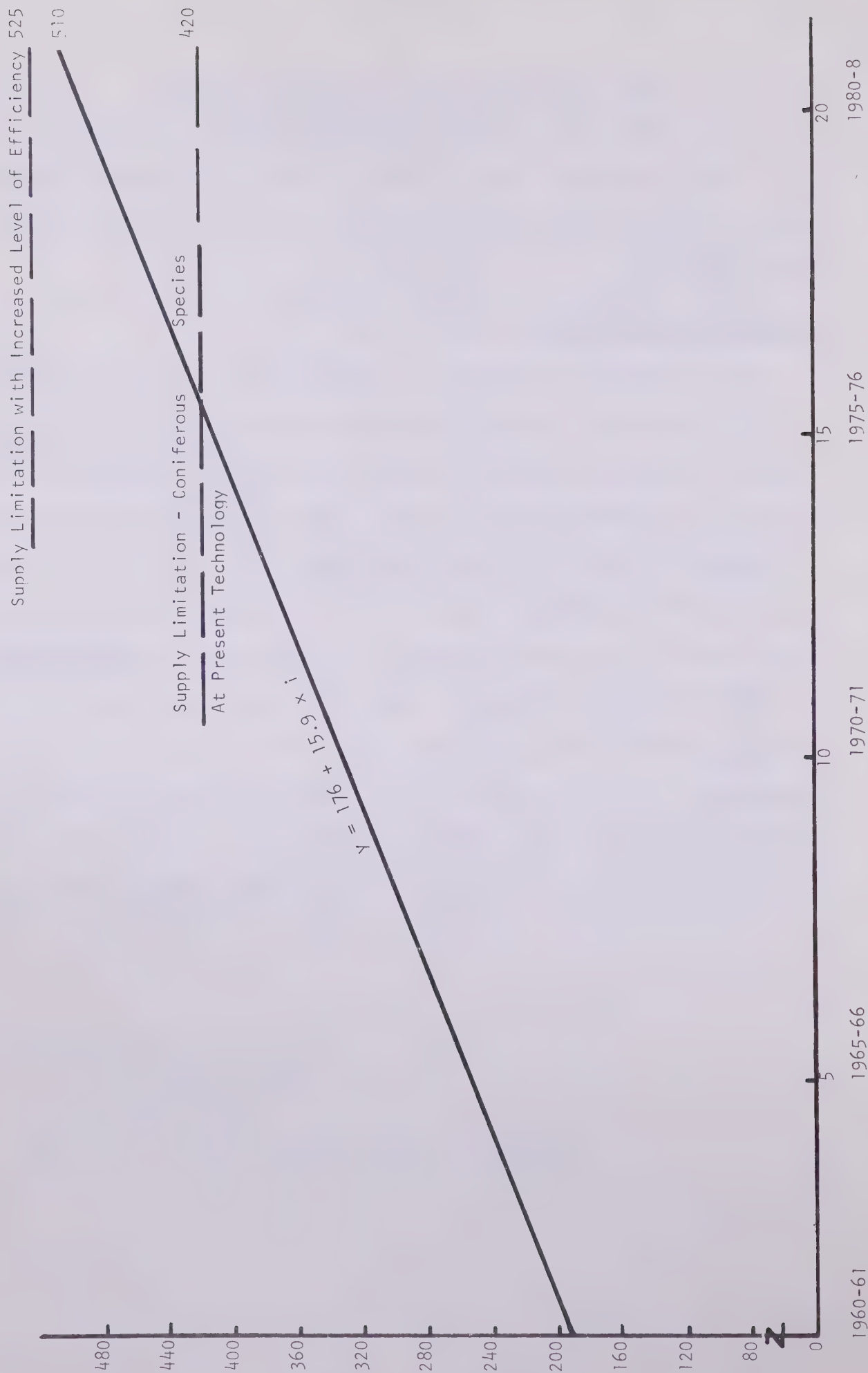
Value of Production 1980

The following graph shows the trend for sawlog production in C. D. 15. If this trend holds, by about 1975 the maximum sawlog cut will be taken out. However, the actual production including a factor for increased timber utilization will be around 500 million fbm. The value of the output after planing is estimated at \$31 million at present prices. If the production of the pulp and paper mills is added to the \$31 million estimate, a total value of coniferous production will be in the neighbourhood of \$60 million at present prices.

After 1980, any additional increases in coniferous value will have to come about through increased manufacturing within the census division, since the physical limit to expansion will be reached. No value has been estimated for large scale poplar wood utilization although it is likely that at least one or two factories using this input will be established by then.

SAWLOG PRODUCTION C.D. 15
1960-61 - 1980-81

Figure 3



MINES, QUARRIES AND OIL WELLS

Oil Wells

The oil and gas industry has played and will continue to play an important role in the development of the economy of C.D. 15. Since the early 1950's, exploration crews have been active and a total of 36 gas and 47 oil fields had been delineated. In the past four years, the pace of exploration activity has increased rapidly. For example, in 1961, 27% (or 433) of the total Alberta wells drilled were sunk in C.D. 15. By 1964 this had risen to 54% and to 66% in 1967. In that year 1,050 wells were drilled in C.D. 15; over half of which (552) were completed from townships 100 to the N.W.T. border, mainly in the Rainbow Lake and Zama Lake areas. In this area in 1964, only 38 wells were completed. In 1964 over 1/2 of the wells were drilled south of Lesser Slave Lake; however, the number decreased steadily through 1966 to a low of 15% in 1967.

These figures illustrate the increasing importance of the oil industry in C.D. 15. During the winter season, the number of rigs in C.D. 15 increased from 46 in 1961 to 120 in 1967. Each rig would employ a minimum of 20 men, so it is evident that at least 1,500 additional jobs were created on oil rigs during this time. Many more people were involved in the supply and transportation aspects and additional jobs were created in the service industry as a result of this additional income generation.

Caution is necessary in interpreting the magnitude of the impact on the economy of C.D. 15 in that many of the jobs were filled by people from outside the area. This created a leakage in the flow of income, since a portion of the income would find its way into the communities where the families of these employees lived. However, in relative terms, it is still evident that the oil industry played a major role in the expanding economy.

The projection of future employment trends in C.D. 15 in the oil industry is quite chancy because of the nature of the resource. Exploration activities by the oil companies are extremely mobile and shift year by year to different regions. On the other hand, development drilling is somewhat more stable as the recovery ratio of oil and gas from known fields is constantly being improved. For Alberta as a whole, about 60% of the total wells drilled are classed as development. The implication of this is that development drilling in C.D. 15 will be carried on over the coming years to obtain maximum yields from the recently discovered oil and gas fields. This activity will continue to pump wage income into the area's economy.

About all that can be said about exploration activity is that C.D. 15 is the largest unexplored area in the province. Relatively few exploratory wells have been sunk in the area east of the Peace River and north of Manning-- 30 in 1967 or about the same number that were drilled in the Rainbow-Zama areas in 1963 and 1964 just prior to the oil strike. Increased exploration activity should gradually cover much of this area.

The Oil and Gas Conservation Board has estimated that another 20,000 exploratory wells will be drilled in the province in the next 30 years to find the remaining oil and gas reserves. Based on present information and assuming that C.D. 15 retains its relative importance, then each year to 1981 an estimated 800 wells would be drilled. These wells would be both exploratory and development.

Assuming that drilling practices remain fairly constant to 1981, that is that the majority of rigs cannot be moved during break-up and freeze-up, then an estimate of the manpower requirements can be made. In 1981, an estimated 1,980 employees will be required on the rigs during the winter season, with the number decreasing to 1,080 in the summer season. As well, around 400 seismic and geophysical positions will be available.

Another field of expansion is likely to be in the natural gas processing and sulphur extraction plants. A number of fields in C.D. 15 support sulphur plants since many of the fields contain 'sour' gas. It can be speculated that new fields which will be discovered will provide either natural gas liquids or sulphur, or both.

Mines

Large deposits of sedimentary iron ore are located in the Clear Hills. Present plans of Peace River Mining and Smelting Co. Ltd., who hold leases on thousands of acres of this ore, call for construction of an iron pelletizing plant by the late 1970's. However, this development depends to a large degree on whether or not anticipated large iron ore reserves are found in the N.W.T., Yukon or Arctic Islands.

The Alberta Resources Railway has raised the possibility of a gypsum development on the Alberta-B.C. border. A testing program in 1967 did not, apparently, indicate that with the present cost-prices structure that this development would be economically viable. However, these conditions will change over the next ten years and may make this operation either more or less of a possibility.

The Smoky River Coal Field is in the process of being developed by McIntyre-Porcupine Mines. These deposits are on the border between C.D. 15 and C.D. 14 and administratively will be classed as part of C.D. 14. Also, it appears that most of the impact of this development will accrue to the people in C.D. 14. However, there will be many positions open in this undertaking for people from C.D. 15 and other parts of the province.

Another major development possibility is the Tar Sands surrounding Peace River. These contain more oil reserves than the total for the conventional oil industry in the province. However, the province's present

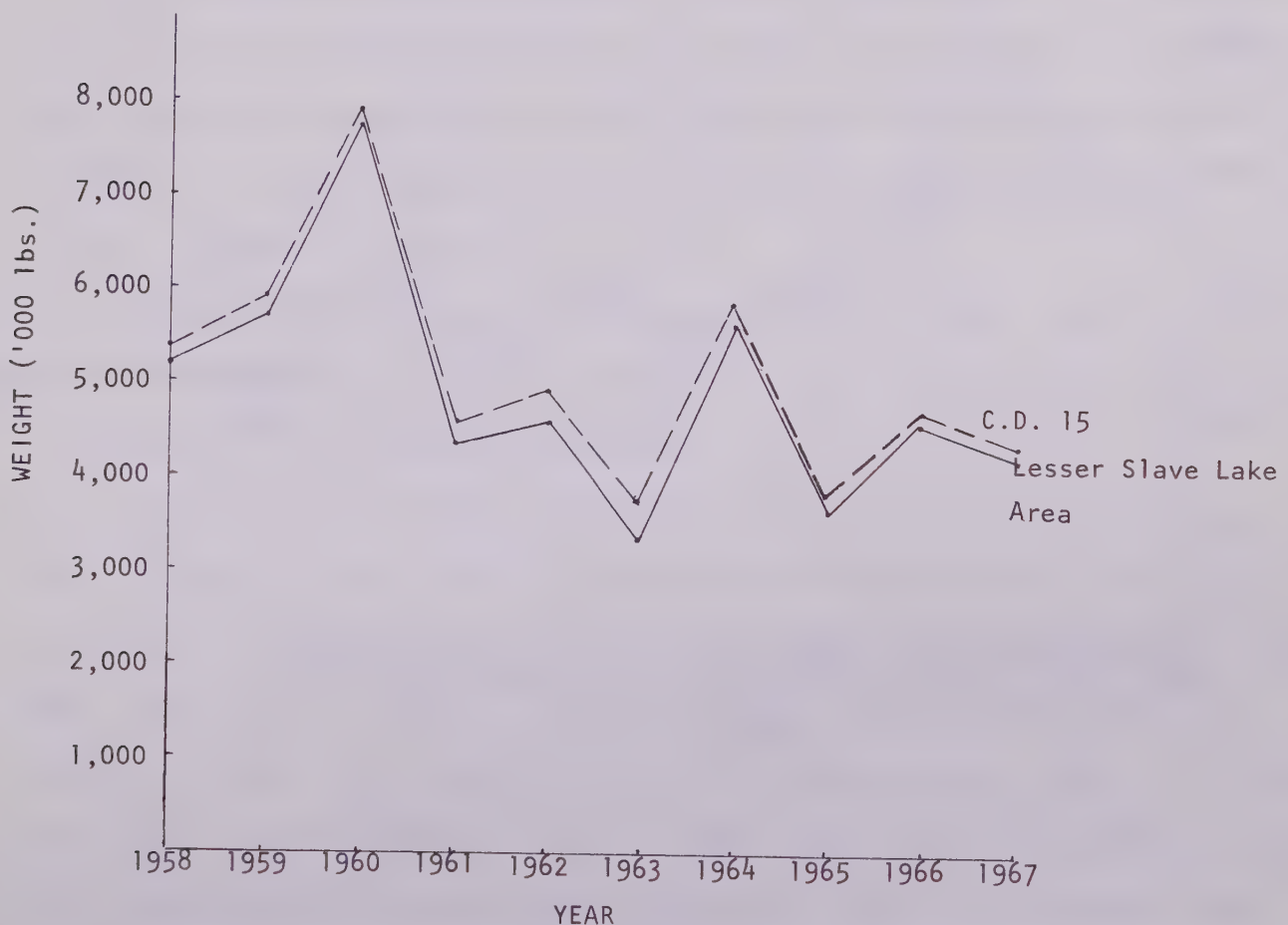
oil policy, the recently discovered Prudhoe Bay field and the development of the Athabasca Sands makes this appear unlikely for the near future. In all probability, any new oil sands extraction plants will be established in the Fort McMurray area.

Other minor developments such as sand and gravel quarries will be expanded as required for local construction.

COMMERCIAL FISHING IN C.D. 15 ^{1/}

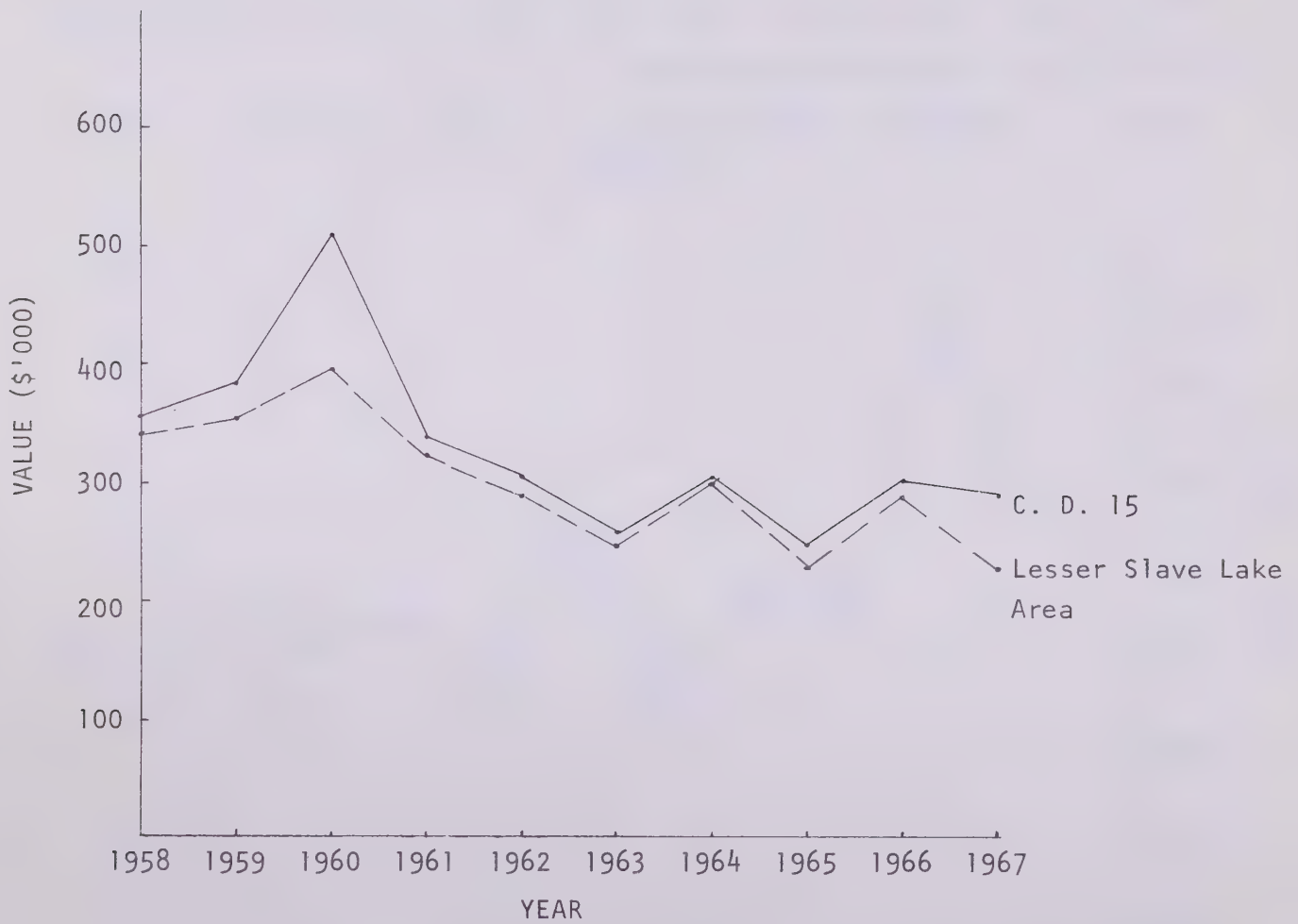
Commercial fishing has not been a major contributor to the gross regional product of C.D. 15, although in specific communities, it has been responsible for a large portion of the employment income. Fishing activity is heavily concentrated in the lakes within a 60 mile radius of Lesser Slave Lake; about 90% of the total catch comes from this portion of the census division. The following graphs indicate the trends in volume and value of the catch over the past 10 years. They also point out the predominance of the Lesser Slave Lake area in terms of both volume and value.

Figure 4 COMMERCIAL FISHING IN C.D. 15 & LESSER SLAVE LAKE
BY WEIGHT



^{1/} Detailed statistics can be found in "Industry and Resources in Alberta's C.D. 15" and/or "An Analysis of Resources in Lesser Slave Lake Area" by J.F. Bigam, A.R.D.A.

Figure 5 COMMERCIAL FISHING IN C. D. 15 & LESSER SLAVE LAKE
BY VALUE



Note: Year refers to Fiscal Year ending March 31, e.g. 1958/59.

A study has been completed by the Rural Development Research Branch which gives some good insights into the income accruing to people involved in the fishing industry. Information for the 1962-63 and 1967-68 seasons was compiled and the results are present below.

First of all, in 1962-63 a total of 433 fishermen purchased 868 licences, or an average of about 2 per fishermen. Over one-half (236) of the total fishermen held at least one licence on Lesser Slave Lake. A total of 562 licences were issued on this lake so it accounted for 65% of the total licences issued. The large number of licences issued for this lake occurs because there were 3 fisheries--whitefish, pike and other species.

In 1967-68, 427 people purchased a total of 766 licences. Of these 132 held at least one licence on Lesser Slave Lake. In this year, the total licences held on this lake amounted to only 212, which was a large decrease from 562 issued in 1962-63. The main reason was that the whitefish fishery was closed in an effort to restock the species.

The number of fishermen in both years was almost equal; however, the total catch had dropped from \$309,400 to \$285,600. This reflected a loss in average income of from \$750 to \$670 per fisherman.

In both years, fishermen from outside C.D. 15 were permitted to fish in the area. In 1962, 26 came from outside the census division while in 1967, the number had increased slightly to 30. In both years, most of them fished on Lesser Slave Lake only. In 1962-63, only 1 of the 26 fished more than 1 lake. In 1967-68 5 fished on two lakes, 1 on 4, and 1 fished 6 lakes. About 2/3 of these people came from the Edmonton area. In 1968, regulations were established which will prevent people from the Edmonton area from fishing in the Lesser Slave Lake region of C.D. 15. They will be restricted to lakes north of the 57th parallel.

Of the fishermen who lived inside the census division boundaries, around 25% fished more than 1 lake. A summary is presented below for the 2 years:

Table 5 FISHermen CLASSed BY NUMBER OF LAKES FISHED

<u>No. of Lakes Fished</u>	<u>No. of Fishermen</u>	
	<u>1962-63</u>	<u>1967-68</u>
1	351	325
2	58	54
3	21	24
4	3	10
5	-	5
6	-	6
More Than 7	-	2
	<u>433</u>	<u>426</u>

A slight increase in number of fishermen fishing more than 1 lake is evident and this, likely stems from the closure of the whitefish fishery on Lesser Slave Lake. No doubt, some other lakes were fished in an attempt to make up for the lost revenue from the whitefish fishery closure.

An attempt was made to establish information on the distribution of earnings for the fishermen in both years. The method used was to find the average catch per fishermen on each lake and then to add these values for all lakes that one person fished. To the extent that the distributions of catch per lake per fisherman are skewed,^{1/} the averages used are not a true picture of the actual income situation. However, bearing this in mind, some important conclusions become evident.

^{1/} i.e. not distributed evenly from high catch to low catch but concentrated at the low end.

Table 6 ESTIMATED GROSS INCOME DISTRIBUTION OF FISHERMEN
IN C. D. 15 1962-63 & 1967-68

Income Range	No. of Fishermen		% of Fishermen	
	1962-63	1967-68	1962-63	1967-68
<100	43	51	10	12
100 - 300	49	145	11	34
301 - 500	47	42	11	10
501 - 750	91	52	21	12
751 - 1000	76	8	18	2
1001 - 1250	17	54	4	14
1251 - 1500	74	32	17	8
1501 - 1750	19	22	4	5
1751 - 2000	10	10	2	2
2001 - 2250	5	3	1	1
2251 - 2500	1	1
2501 - 2750	1	3	..	1
2751 - 3000	-	1	-	..
3000+	-	2	-	..
	<u>433</u>	<u>427</u>	<u>100</u>	<u>100</u>

.. insignificant amount.

The above table shows the results of average gross income analysis. One point is evident and that is in both years 70% of the fishermen earned less than \$1000 from the sale of fish. At the other end of the scale a very small percentage grossed over \$2,000. It is known that on most lakes there are a small number of good fishermen who catch a relatively high share of the total catch. The effect of introducing this observation into the above, is to increase the per cent of fishermen in the over \$2,000 range and reduce the income of some fishermen in the less than \$2,000 range. For example, if in the extreme case (1967-68), 95 fishermen earned \$3,000 gross then the remaining 332 fishermen would have grossed \$1 each. The above statistics refer to the gross income of the fishermen out of which operating expenses must be deducted.

The result which comes out of the above is the fact that there are too many people in the fishing industry in C. D. 15 if fishing is the main source of income of the people involved. At one time, when the total catch rose to between \$400,000 and \$500,000, there was more opportunity for adequate returns.

Of the 427 fishermen licenced in C.D. 15 in 1967-68, only 127 had purchased licenses during the 1962-63 season. Using the same method as previously for establishing the income distribution of the fishermen, it becomes evident that these 127 people apparently caught a relatively high proportion of the total catch. For example in 1962-63, 58% of these 127 fishermen grossed less than \$1000 whereas 76% of the remaining (433-127) 306 fishermen earned less than this figure. Similarly in 1967-68, 52% of the 127 fishermen apparently grossed less than \$1,000 while 76% of the rest earned less than \$1000. The method of estimation is quite rough and subject to error, however, it is likely valid to suggest that very few people consider this their major occupation. Only 1/4 of the total number of fishermen fished during both years and these are the people who likely earn fairly substantial amounts from this occupation. However, even if only these 127 people fished, their average gross would have been \$2,440 in 1962-63 and \$2,240 in 1967-68, hardly enough to provide an adequate standard of living.

The following table provides an insight into the average gross catch per fisherman on each lake.

Table 7 AVERAGE GROSS CATCH PER LAKE IN C.D. 15

	Average					
	<u>\$400</u>	<u>\$100-\$300</u>	<u>\$300-\$500</u>	<u>\$500-\$1000</u>	<u>\$1000-\$1500</u>	<u>\$7500</u>
No. of Lakes 1962-63	5	9	2	5	1	1
No. of Lakes 1967-68	7	14	3	3	1	0

Total number of lakes fished in 1962-63 was 23 and 28 in 1967-68. It is evident that small average catches per license per lake were the rule in both years. It is difficult to understand how any profit can be made by anyone grossing less than \$300 per lake. This type of information suggests that "fish farms" or co-ops would be a logical step. One person or a group of persons could be granted a quota on a lake so that they could earn a reasonable average return. The quantity of fish to be caught every year would be set and the person(s) could fish when the price was best bearing in mind that they would have to harvest the set volume or have their quota reduced. This would mean that using present fishing practices the number of commercial fishermen would be reduced from the 1967-68 level of 426 to around 100.

There is one main question which must be resolved and that is "should it be a policy to attempt to establish fishing as a full-time occupation for a few or to leave the industry as a part-time or seasonal occupation?" To the extent that modernization and specialization will not likely occur if the industry is strictly seasonal then the full-time concept is necessary. Further processing in C.D. 15 and Alberta is desirable. To ensure that supply is adequate year round requires a reliable group of fishermen who can do some realistic planning.

Expected Development

By mid 1969, a Freshwater Fish Marketing Board will have been established to assist the fishing industry in Western Canada. The Board will act as the sole buying and selling outlet for freshwater fish from the Prairies, Yukon, N.W.T. and Northern Ontario. In this role, it will attempt to reduce the large price fluctuations which fishermen have put up with for years and it will be able to exert pressure on the Chicago buyers who have often been accused of unfair practices. Supply-demand schedules will be more definite and the periodic market gluts will be reduced. Alberta fishermen will find that they are in more direct competition with fishermen from the other areas. To establish a prosperous

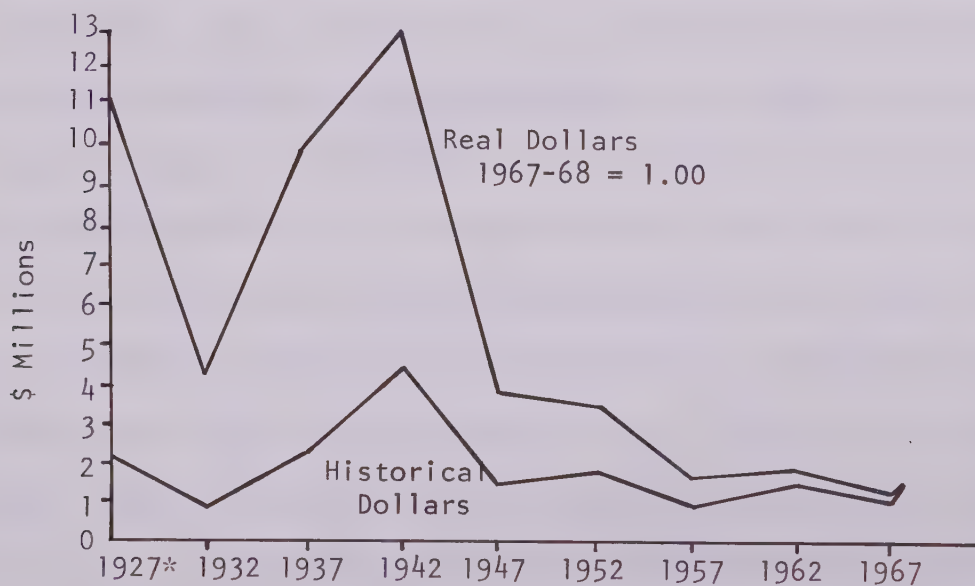
industry will mean that techniques will have to be modernized since a good deal has already been done in Manitoba to aid the industry. Alberta fishermen must realize that they produce only between 5 and 10% of the catch of freshwater fish so that prices will be established largely by activities in other parts of the marketing area.

The Fish and Wildlife Branch is presently working on the feasibility of using a trawl vessel on Lesser Slave Lake. The purpose is to improve the quality of the fish, practice more productive harvesting methods, and allow selective netting of species. It is hoped that this type of fishing will allow the whitefish in that lake to become plentiful again. As it is, the small gill nets used for tullibee fishing continue to trap young whitefish and the whitefish population has not increased appreciably since 1965 when the whitefish fishery was closed. If trawlers prove to be economic, tullibee fishing would be carried on by the trawlers in the summer with the surplus properly frozen for mink food. During the winter months, gill net ice fishing for whitefish could be permitted. Capital costs for these trawlers are in the \$30,000 range and manpower requirements are 2 or 3 persons per boat. Perhaps no more than 4 or 5 trawlers would be required to catch the majority of the summer catch in Lesser Slave Lake. This would sharply reduce the number of men needed. However, because the fish would be caught live, they would be in excellent condition for further procession which presents the possibility of fish processing facilities and new employment opportunities. Improved freezing facilities would also be required to maintain adequate supplies for the mink ranchers.

FUR TRAPPING ^{1/}

It is a well known fact that the fur trapping industry in Alberta has been steadily declining in importance since the late 1940's. In terms of total provincial sales, yearly figures have ranged between \$4.5 and \$1.8 million from 1926 to 1967 with the average value around \$2.1 million. However, this average value has not been reached recently since 1955. The following graph indicates the provincial trend. Provincial figures are used since no regional breakdowns are available for historical statistics. The same trends should hold for C.D. 15 since approximately 50% to 60% of the Alberta catch comes from here.

Figure 6 TOTAL DOLLAR VALUE OF TRAPPED FURS
ALBERTA (1926/27 to 1967/68)



* Fiscal year ending March 31.

The graph indicates that at one stage substantial amounts of money were realized by the trapping industry but this has since declined tremendously. It is important to remember also that inflation has decreased the purchasing power of the dollar so that a 1926 dollar is worth almost five times as much

^{1/} See Bigam, J. F., op. cit., for more detailed discussion.

as a 1967 dollar. The graph above illustrates this decrease in purchasing power and indicates that the relative decrease in value was much larger than the absolute decrease.

C.D. 15 Situation

As reported elsewhere ^{1/} the number of trappers in C.D. 15 increased from 1,260 in 1961 to 1,360 in 1966. In 1966, these 1,360 trappers operated on 1,015 trap lines or trapping areas so that there was an average of 1.3 persons per trapping area.

A study ^{2/} done for the 1964-65 trapping season set out two areas on which information was collected. One area was all of C.D. 15 north of an area bounded by the Chinchaga River, the Peace River from Carcajou to the boundary of Wood Buffalo Park and then northward to the N.W.T. boundary. This was designated as the Hay Lakes area. The other area, called the Peace section, was bounded by the 16th base line (north of Whitecourt) to its junction with the Athabasca River, up the Athabasca to Smith, eastward to range 21, northward to the Wabasca River, and following the river to the 5th meridian up to the boundary of the Hay Lakes area. The results of this study showed that in the Hay Lakes area during the 1964-65 trapping season an estimated \$70,000 in pelts were sold by the trappers, holding 116 active trapping licenses for an average take per license of \$605. (An active license has had a fur sale registered for it in that year.)

In the Peace area, there were 829 active licenses and a total of \$520,000 in fur pelts was taken from this area. This amounted to an average of \$630 per active trapline or trapping area. In both areas more than one Indian or Metis was permitted to trap on the same trapline, so that the average catch per active license was more than the average per trapper.

^{1/} Bigam, op. cit.

^{2/} M. Dwyer, (unpublished study)

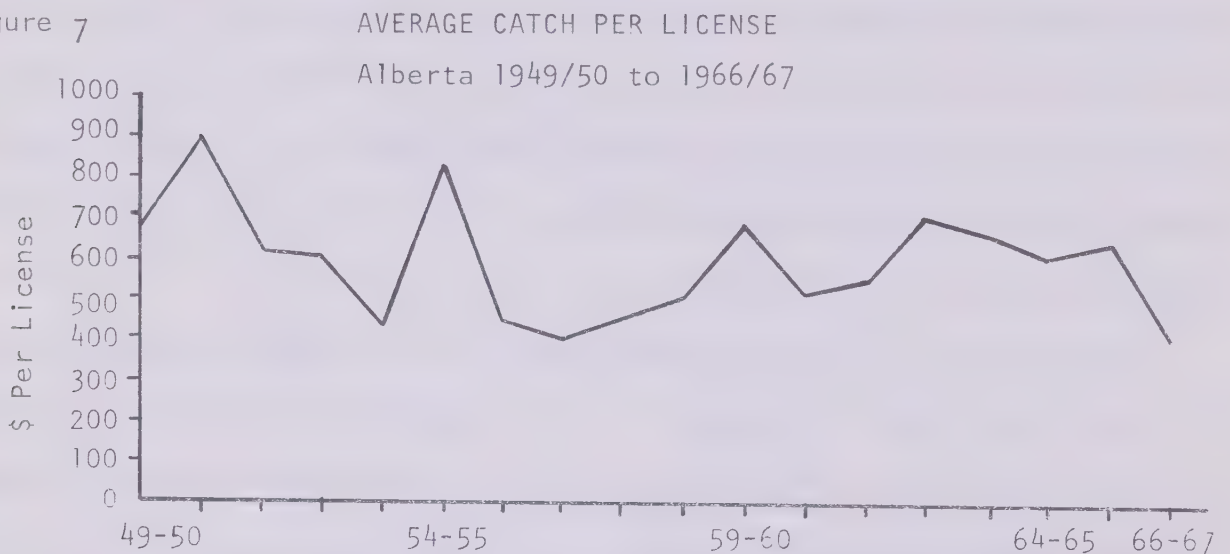
In 1964-65 there were about 1,030 trapping areas or traplines in C.D. 15. Of these, 945 sold at least a small number of pelts, indicating that around 85 lines were not even used. As noted above, the average catch on the active licenses was approximately \$620. It is evident either that the areas are underutilized or that the fur supply is too small for the number of people involved and therefore adjustments should be made to the size of areas. There is evidence to support the first hypothesis both from personal experience and written reports. The introduction of welfare services into a community is generally associated with a decrease in pelts taken. Reports from the Fish and Wildlife officers estimate that in general, only 50% of the potential take is harvested.

Trapping figures for treaty Indians in C.D. 15 in 1966/67 indicate that in the Hay Lakes area the average catch per trapper ranged from \$125 to \$500 depending on the band; in the Peace area the average ranged from \$160 to \$500; the overall average for C.D. 15 was \$241. Unfortunately no 1964/65 figures are available for comparison. However, assuming that trends in fur production by Indians were similar to total production trends (values fell by 40%) the average for the treaty Indians in 1964/65 would have been \$400 or \$220 below the overall C.D. average of \$620.

Referring to the Alberta situation again, the average catch per license is presented on the next page. These averages should be used with care since there is no certainty with regard to how many trapping areas were used or the distribution of the catch, however, they do indicate a low average return and yearly fluctuations. From 1949 to 1967, total provincial trapping licenses decreased from 2,813 to 2,500. From year to year the figures fluctuated, depending upon the value in the preceeding year. In other words, if the total catch was relatively high in one year, then in the next year more trapline registrations were sold. It is evident that trapping activity depends on the

immediate past rather than on what is anticipated in the coming year, however, total catch does not necessarily have a positive correlation with the previous year's prices. (Noted by M. Novak, unpublished study, Fish and Wildlife.) Before leaving this discussion, one other illustration of the contraction of the industry: the number of fur dealers decreased from 350 in 1949/50 to 152 in 1966/67.

Figure 7



Price Trends

One of the major drawbacks in the wild fur industry is the yearly price fluctuations. The graphs on the following page illustrate the changes from 1949/50 to 1967/68 for the major species trapped in C.D. 15. It appears that the beaver markets bottomed out from 1956 to 1959 and started a gradual upswing. The muskrat prices bottomed in the same period, rose to relatively high levels from 1962 to 1965 and then plunged down to previous low levels. The squirrel pelt market continued the same downward trend until 1961/62 when it showed a sharp recovery and then a subsequent drop. The mink and ermine markets showed an overall downward trend, marked by periodic recoveries but both are presently at either the lowest or almost the lowest prices in the 19 year period. In all cases, prices bounced up and down from year to year.

Figure 8

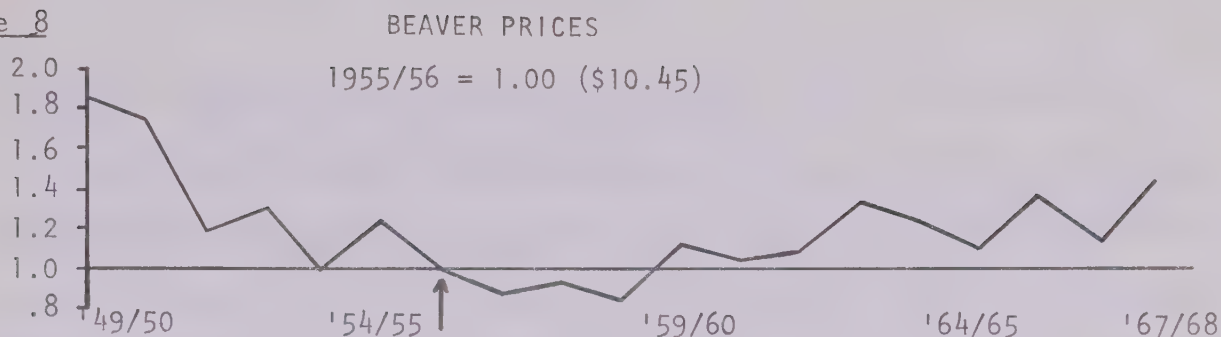


Figure 9

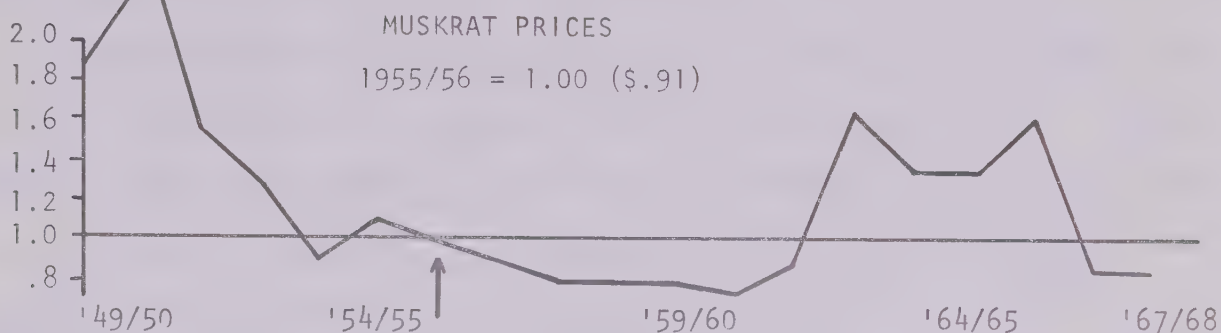


Figure 10

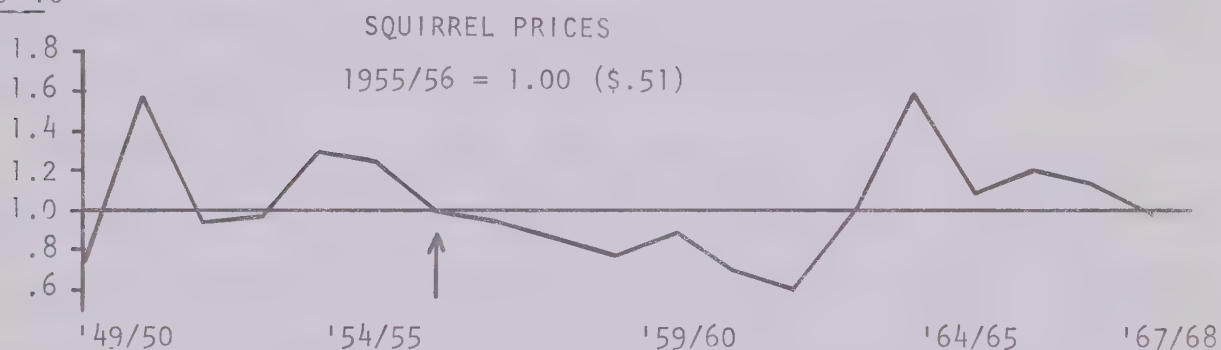


Figure 11

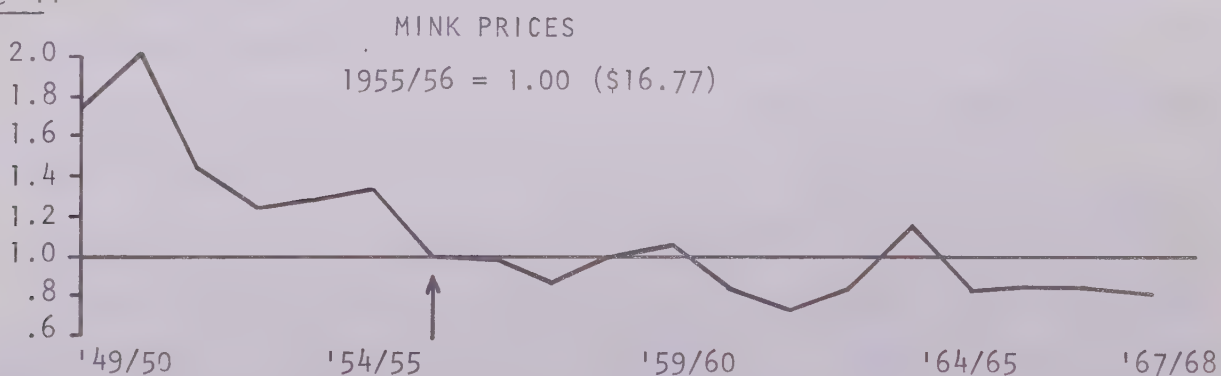
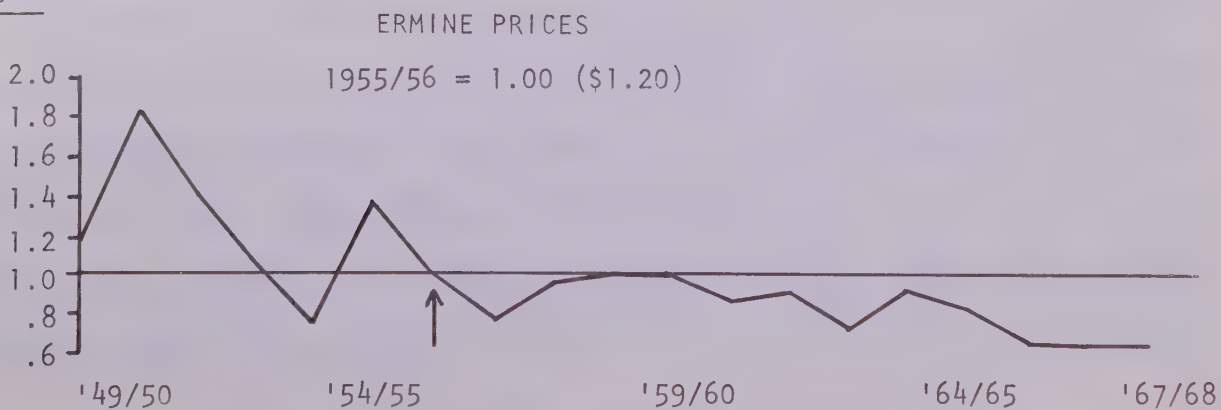


Figure 12



Prices in the wild fur industry are established by Canadian and subsequently world demand. Alberta production amounted to 10% to 15% of the Canadian figure. Therefore measures taken in Alberta cannot reasonably be expected to radically change the price system. There is one point in Alberta's favor, and this is that the fur sales are held at one of the earliest dates in North America and therefore these sales are price-trend setters. Because the sales are relatively early, a strong demand for top quality pelts can be expected and therefore, increased effort should be made to improve the quality of the pelts marketed.

This price uncertainty has not assisted the trapping industry. For example, a trapper may work in his area for three to four months expecting to receive around \$1.25 per muskrat pelt and when the furs are eventually sold to a dealer or a fur auction, he may receive only \$.85 or 30% less. The graphs show that this happened many times for all the different species. Conversely, large price increases occurred, but this turns out to be a "windfall". This has relatively less effect on a person than if he is expecting a certain sum and received less than that sum.

Some Development Guidelines

1. The first decision to be made is to establish the importance of the fur industry to the people and economy of Alberta and C.D. 15. As well as the 3,400 trappers, there are perhaps another 200 dealers and auction house employees. In terms of value of production it adds an insignificant portion to the provincial product. However, its effect on C.D. 15 is felt relatively more than in the province as a whole. Here, around 1,000 people are involved to some degree in trapping. Therefore, considering the families, between 4,000 and 6,000 people (or from 5% to 7% of the total population) depend upon fur trapping for some portion of their income. So in terms of the number of people involved, this industry must

be studied in the context of a C.D. 15 development plan.

2. Even though quite a number of people are affected, the dependency on this occupation must be determined. For many people in C.D. 15, fur trapping is strictly a supplement to farming operations or construction work. However, many others, who because of the area in which they live or their lack of skills and training, have no other employment opportunities. For these people, fur trapping may be the only possible or practical source of present and future income. It becomes necessary to be particularly concerned with the plight of this group and what measures could be undertaken to improve their return from this occupation. To do this involves the identification of these people so that any needed assistance can be channeled to them.

3. This rugged occupation has gradually become relatively less rewarding than other occupations. Wages in the forest and oil industries have increased much more rapidly than have pelt prices. Indeed, fur prices have not risen as rapidly as other commodity prices and each trapper has had to work that much harder to simply maintain his existing standard of living. Combined with this is the uncertainty of the eventual selling price of the pelts. It is not surprising that the desire to trap has often been replaced by a reliance on welfare.

4. One program which should be expanded is the evaluation of the fur potential in each trapping area. At the present time, this type of study is being initiated by the Fish and Wildlife Division Officers. Follow-up studies by the regional biologists would delineate areas of large fur populations and those with small populations. Bearing this in mind, the present trapping areas could be studied to see if it is (at least theoretically) possible to catch a certain set minimum value from that area. If not, some area adjustments should be made.

5. In many cases, trapping areas are located many miles (greater than 50 miles) from the trapper's home. At the same time the traplines surrounding the settlement have only small amounts of fur taken from them. Instances are frequent, where the licenses in these areas are held by people who in turn live many miles from the trapping area. It would seem that one objective of the people would be to rationalize the trapping areas so that total travel distances would be minimized. One basic assumption made is that the closer proximity to the working area would encourage more trapping. In the long run, it would pay to make one trapper viable by providing a favorable area and paying another welfare, than to have them both on welfare and trapping infrequently. As well, the method would allow training and a possible subsequent placement of the persons who agree to give up trapping.

If the assumption of maximizing the returns is incorrect for a particular individual, then arrangements could be made to transfer the license. This could be one of the conditions under which a person held or was provided with a "good" trapping area.

6. One project which should be undertaken is an income study of the trapping areas. In co-operation with the Fish and Wildlife Branch the H.R.D.A., Research and Planning Division will be providing information on the fur catch in the upcoming year. With this information the Fish and Wildlife personnel can take steps toward ensuring that the fur resource is utilized to a more intensive degree.

7. The treatment of raw furs by the trappers is a vital point in obtaining premium pelt prices. Presently, many trappers lose from 20% to 30% of their potential return from their catches because of poor skinning, flushing, stretching or drying practices. It is apparent that an educational program to improve these practices would substantially increase trapping income.

8. One question which arises is that of marketing of raw furs only. A study which would look into the possibility of marketing dressed furs, perhaps through regional co-operative outlets, would be useful. At the present time only an insignificant portion of furs are dressed in Alberta. Indications are, that because many of the buyers at the fur auctions are from outside Canada, they are interested only in raw furs and not dressed furs. However, a study might uncover some economically feasible alternatives to selling only raw furs.

9. Each of the above suggestions as well as others which might be forwarded should involve at least a preliminary cost-benefit analysis. There is a danger that these costs could total more than any potential economic returns. Still, in the cost-benefit outline the social and conservation aspects must be considered as an important class of benefits.

RECREATION AND TOURISM IN C.D. 15

In C.D. 15 there are at least six different sub areas which offer different opportunities for tourism developments. These areas are:

1. Swan Hills
2. Slave Lake and the surrounding lakes
3. Peerless Lake area
4. Rocky Mountain Wilderness
5. Peace River Valley
6. Clear Hills area

Each of these areas offers specific characteristics which are or could be major tourist attractions. A brief summary of these features follows:

Swan Hills ^{1/}

The Swan Hills rise gradually from a base of around 3,000 feet to a high point of 6,000 feet. This area consists of many small hills, consequently, valleys and streams are numerous. Access is relatively good since oil activities have opened up most of the area. However, facilities are very limited. Fishing is good with arctic greyling and walleye of major interest.

Lesser Slave Lake and Surrounding Lakes

Lesser Slave Lake offers some of the best beaches in Alberta from the standpoint of sand quality and quantity, and backslope. However, many of these beaches are located at the eastern end, where the prevailing westerly winds create both a chill factor and the danger of rough waters. The lakes in the surrounding area have a poorer quality of beaches but less of a wind problem. On all of these lakes, cottage developments would be suitable. Fishing is excellent for whitefish, pike and

^{1/} Abstracted from report of the Parks Planning Branch, Dept. of Lands and Forests.

pickerel and many sites on these lakes would be very suitable for camp grounds.

Peerless Lake Area

A very high potential for intensive water-oriented activities exists. Excellent beaches, clean water, well drained backshores and well treed backgrounds are found on a number of lakes in the area. Lake trout are an important species in Peerless Lake while whitefish, pike and pickerel are found in all of the lakes in the area. Again, ideal conditions for cottaging, boating and camping exist on these lakes. Access is difficult during wet spells.

Rocky Mountain Wilderness

This southwestern area of C.D. 15 offers another completely different type of tourism potential. The area is largely unexploited and unspoiled and offers excellent development possibilities. Scenic values are high as much of the area is mountainous. Also, forest cover is excellent with coniferous stands predominant in the higher elevations and trembling aspen dominant in the foothills and plain. A number of points, such as the Kakwa Falls, offer exceptional viewing opportunities. Rapidly flowing, clean streams provide excellent fishing conditions for dolly varden, arctic greyling and rocky mountain whitefish.

Peace River Valley

Various locations along the Peace River offer potential for different developments. Beginning at the B.C. border, the deep valley provides exceptional viewing and camping opportunities. These features extend up to the Vermilion Chutes, east of Fort Vermilion. The Vermilion Chutes are a series of large rapids which offer excellent viewing characteristics and improve the attractiveness of the area for camping use. A number of islands in the river have a high capability, particularly now that the

level of the Peace can be controlled by the dam in B. C.

Clear Hills Area

This area offers some potential, although much of the use would likely come from residents in C.D. 15 since the resource here does not offer exceptional attributes. Essentially, the main distinction is that the hills afford a well-drained, steeply rising topography in a relatively flat area.

Hunting

The previous section pointed out some sub-area potentials which are most relevant for the spring and summer months. Hunting extends the recreation and tourism season to the first week of December and therefore, helps to maintain the inflow of recreation dollars.

Moose is the most important big-game animal hunted with elk and deer ranking next in importance. Black bear are also fairly common throughout much of C.D. 15. In the southwest corner, mountain sheep and goats are relatively plentiful while caribou can be found in widely separated locations.

In 1967, moose hunting was opened to non-residents of Alberta and a small advertising campaign was undertaken in four central western states. As a result, around 10,000 non-resident hunters came to Alberta. In 1968 a guide-hiring requirement was established, the fee was doubled and even less advertising was done and still around 4,300 came. The intention is to gradually increase the number of non-resident hunters coming to ensure that resident hunters still will have excellent opportunities and will not be crowded out by non-Albertans.

Wildlife biologists indicate that even the heavy moose harvest of 1967 did not approach the potential rate of use. Actually, moose populations close to access roads were often over-harvested while the majority

were left untouched because of restricted or non-existent access roads.

Bird hunting areas can be found throughout C.D. 15. In fact, some lakes are in the path of the migrating birds and are used as stop-overs.

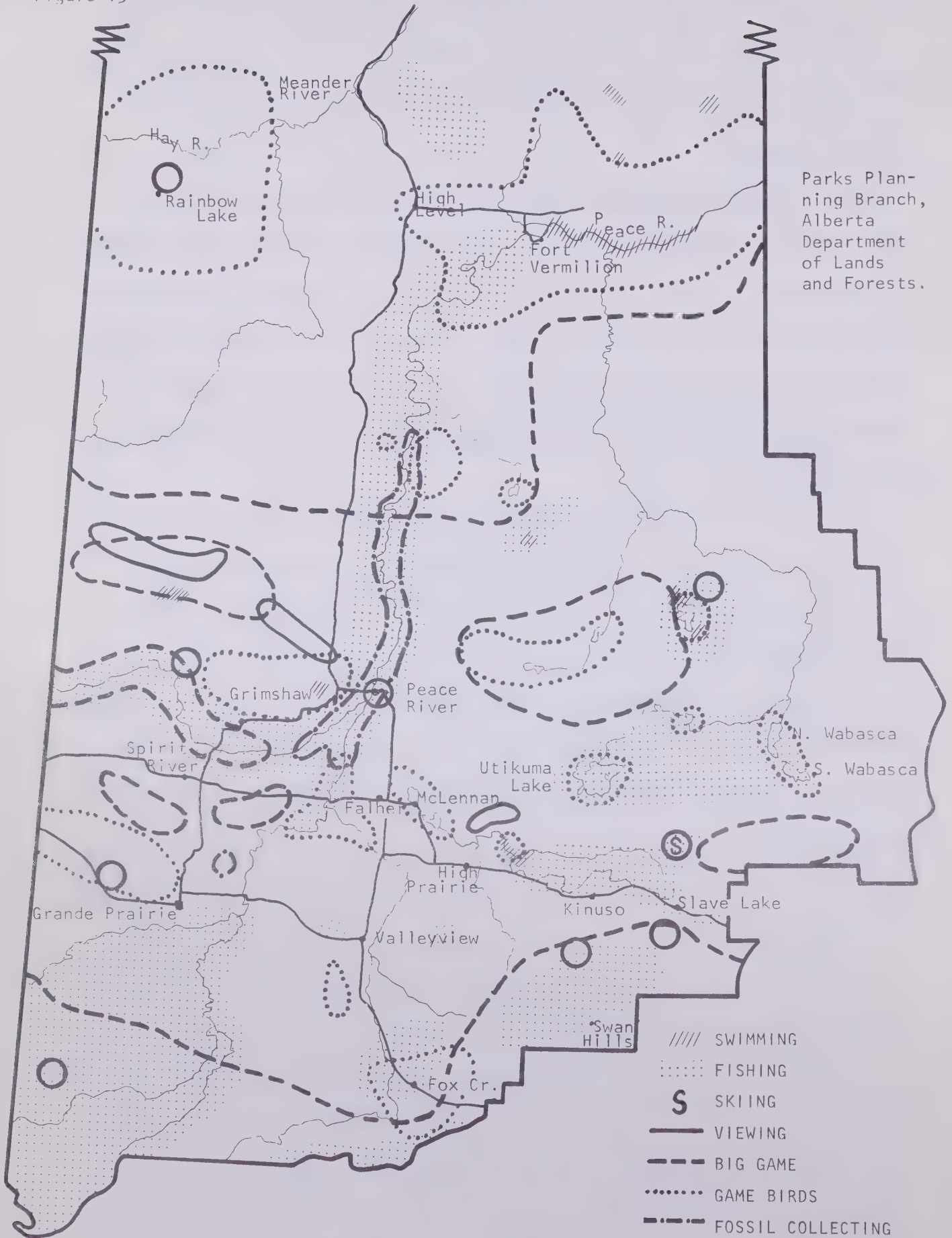
Historical Sites

C.D. 15 has a very colorful and interesting history of colonization; from the fur trade to the Klondyke gold strike through to the modern oil explorers. The fur trade saw the first influx of people, agricultural development followed and then the gold rush made C.D. 15 one of the major routes into the gold fields. Missions, forts, trading posts, paddle wheelers and barges are a part of the area's past and could be emphasized as attractions.

The map on the next page provides a summary of the potential in C.D. 15 for the recreation and tourism industry. The map points out both the varied opportunities and the magnitude of these opportunities. It illustrates that resources are fairly well dispersed and points out that the area around Peerless Lake, Fox Creek, Lesser Slave Lake and Peace River have a number of recreation possibilities concentrated in a fairly small area. Perhaps these will become centers of recreation and tourism developments.

Figure 13

RECREATION POTENTIAL IN C.D. 15

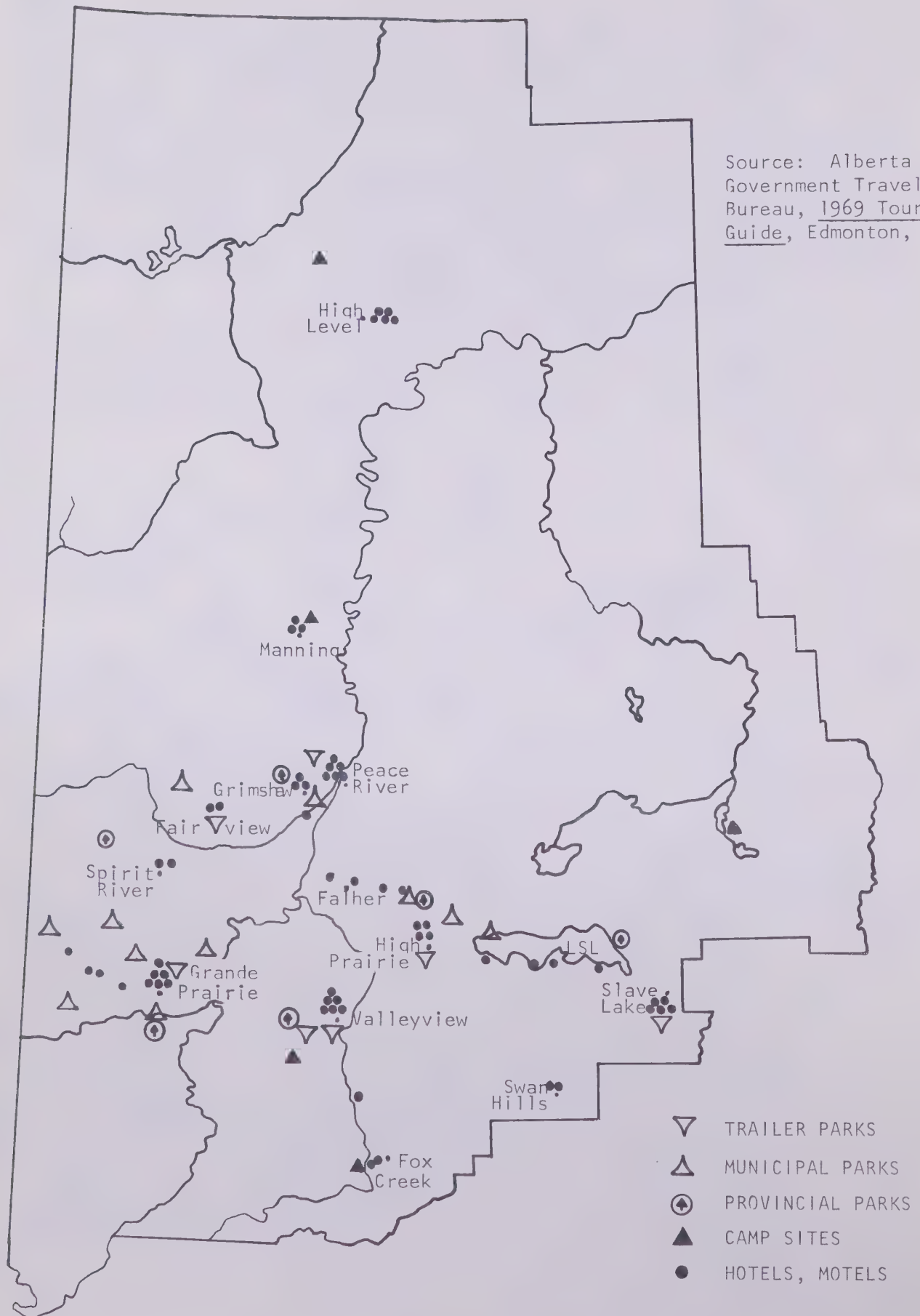


The map on the next page summarizes most of the tourist facilities in C. D. 15. It is apparent that accommodations are present throughout the accessible areas. The question arises as to whether efforts should be directed to using the present facilities to a higher degree; or to constructing facilities with special characteristics, such as hunting and fishing lodges, to attract a different clientele.

A study to be undertaken during the summer of 1969, will shed some light on the attitudes of tourists to present and suggested facilities.

Figure 14

GOVERNMENT APPROVED TOURIST ACCOMMODATION IN C.D. 15



TRADING AREAS

In 1966, part of C.D. 15 was analyzed to determine trading area boundaries. Most of the area south of Manning was considered in establishing these areas. (See map on Page 254 to identify study areas.) The maps on the following pages identify the approximate boundaries. In determining boundaries, the method used was simple: Merchants were asked where their customers came from. It is evident that Grande Prairie and Peace River, form the focal points for the majority of people in C.D. 15, in that merchants in these towns reported patronage from an extensive rural area. It appears that Grande Prairie draws on a trading area of some 48,000 while that of Peace River is approximately 29,000. The boundaries of these two areas overlap so that about 4,000 people frequent both communities. Since the area north of Keg River was not included in the study, it is likely that the Peace River trading area population figure is somewhat larger, perhaps as high as 33,000 people.

Naturally, the attractiveness of the two communities to the people of the trading areas varies with distance and types of activity. For example, people travel further to purchase clothes and medical services than they do for gas and groceries. This then, results in a number of smaller trading areas to service the different types of demand. Each small community has a trading area of some size since they supply gas and groceries to the surrounding area. However, people in this area may go to a town farther down the road to buy a car, or clothing. They may go still further to obtain medical or legal services, so a person can be situated in more than one trading area. Figure 16 on Page 251 indicates the more important trading areas.

Overlapping areas indicate duplication of activities in communities. For example, the trading areas of McLennan, Falher and High Prairie overlap

Figure 15

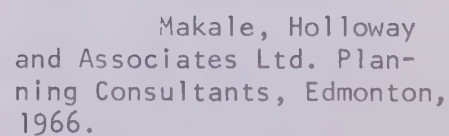
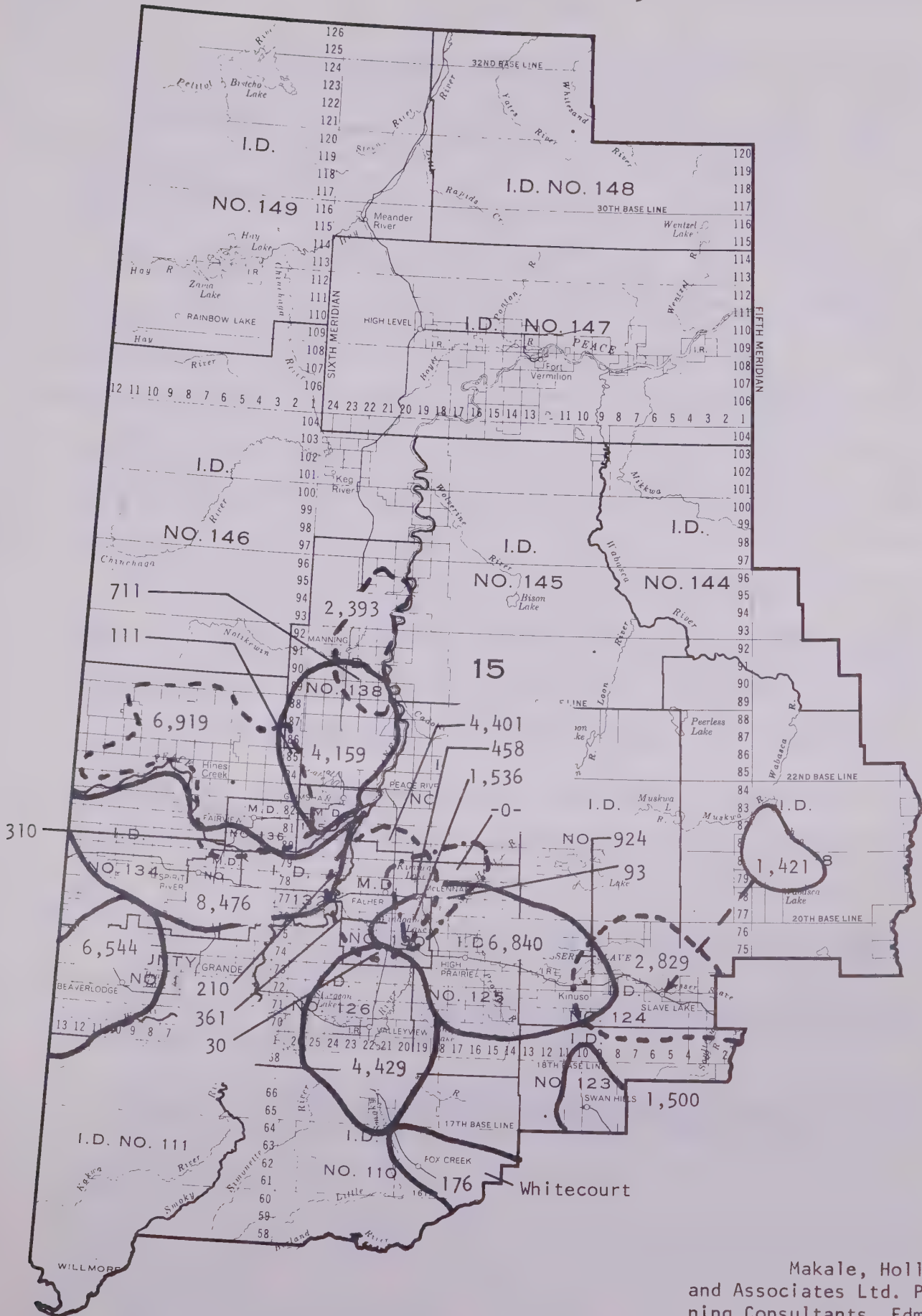


Figure 16

SELECTED TRADING AREAS IN C.D. 15



Makale, Holloway
and Associates Ltd. Plan-
ning Consultants, Edmonton,
1966.

a great deal. Each community is attempting to serve some of the needs of the same people. A decreasing farm population results in underuse of existing establishments and a subsequent decrease in profits and employment.

The trading areas presented previously were drawn up in 1966 and they have changed already. For example, a hospital and liquor vendors was established in Slave Lake and many of the people on the boundary who might have gone to High Prairie, now go to Slave Lake. Similarly, road construction and improvements change boundaries of the areas. However, this change is usually in one direction, i.e. there is a tendency for some trading areas to increase in size at the expense of others. Which ones increase and which ones decrease depends on the stage of evolution of the community. If services and selection are fairly adequate, the community may begin to draw on a larger area if (say) a road is improved. However, if the conditions are marginal then the traffic may go in the opposite direction and it may not be possible for the community to ever develop the required services.

TRANSPORTATION

Transportation, while often not recognized as of major importance to regional development, plays a leading role in economic growth: Costs of transportation always play an important part in any decision to construct new factories. In many cases the choice among possible sites for factories using the same raw materials is one of minimizing costs of transportation. This puts northern Alberta at an immediate disadvantage for most industries in that it is so distant from major markets. For this reason it is imperative that a very efficient transportation system be developed. The forest industry around High Level expanded only after the G.S.L. Railway was completed into the area. Similarly a road into the area east of the Peace River will open up large timber reserves.

Studies of the existing rural road system and plans for its improvement were conducted in 1966. All settled portions of C.D. 15, south of township 97, were analyzed to determine the future needs for an improved road system. ^{1/} The map on the following page shows the area covered. These reports recommend construction of 7,600 miles of secondary roads in this area. The existing road system totals approximately 10,000 miles so

1/ Bearsto-Stewart-Weir; Rural Road Inventory and Future Road Needs. Wapiti Study Area No. 14. Grande Prairie, Alberta, 1966.

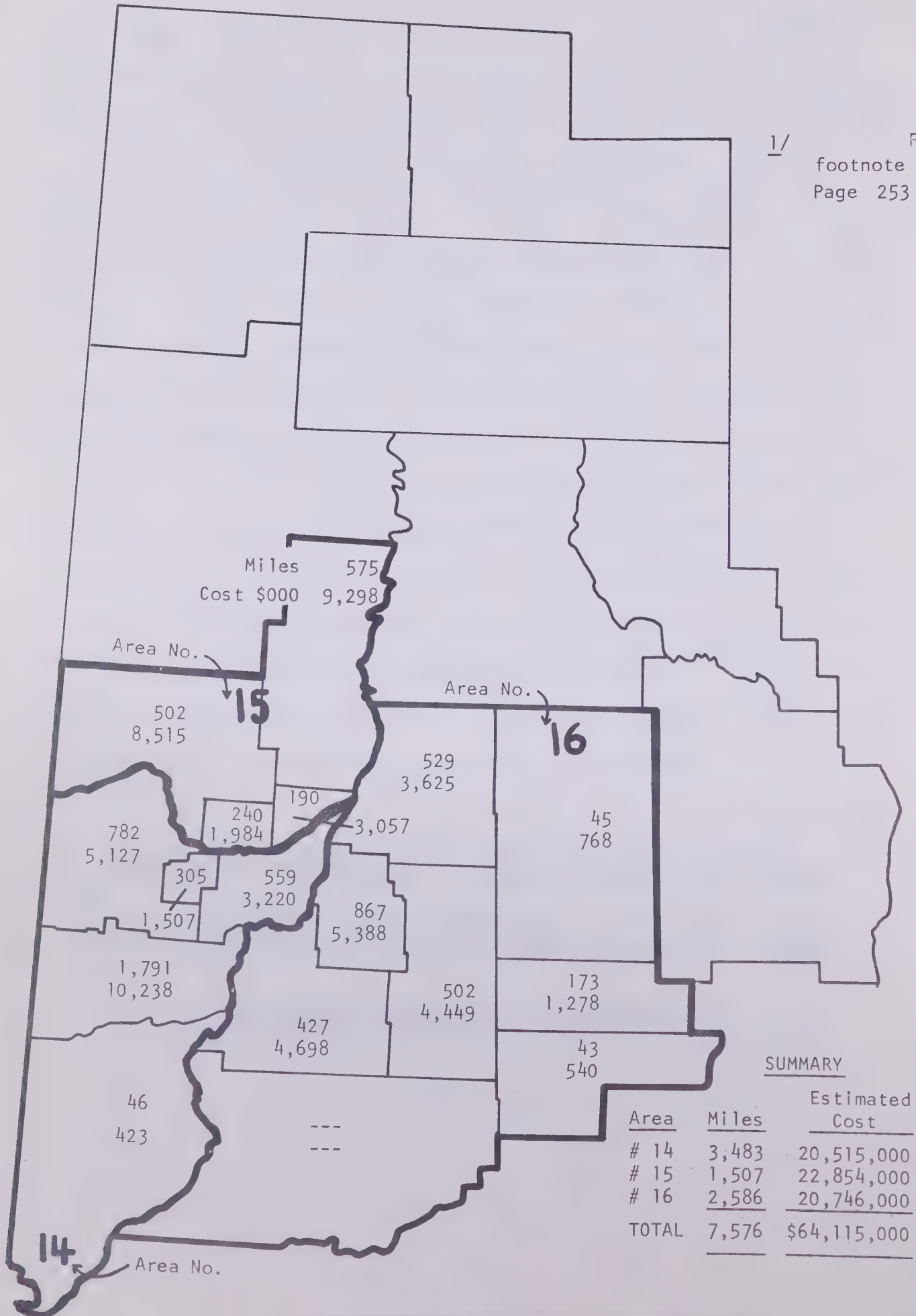
Bearsto-Stewart-Weir; Rural Road Inventory and Future Road Needs. Lesser Slave-Sturgeon Study Area No. 16. Grande Prairie, Alberta, 1966.

Ward L. C.; Rural Road Study, Davis-Manning Area No. 15. Associated Engineering Services Ltd., Edmonton, Alberta, 1967.

Figure 17

ROAD STUDY AREAS IN C.D. 15 ^{1/}
AND TOTAL PROPOSED MILEAGES AND COSTS
(Estimated in 1966)

^{1/} For
footnote see
Page 253



it is evident that a major road building program will be needed over the next ten years. The cost of this road work was estimated to be approximately \$64 million in 1966. No doubt costs have risen beyond this even by 1969.

The mileages and costs noted above do not include main highways of the road system north of township 97. Substantial monies will be spent over the next five years on paving highways #2 from Slave Lake to High Prairie. Similarly, constant upgrading of the MacKenzie highway will be carried on. Presently, expenditures averaging \$6.1 million over the last five years have been spent on new construction in C.D. 15. Fiscal conditions considered, it is unlikely that large additional monies will be available for this program and therefore the suggested system can only be very gradually implemented.

It is evident that natural resource developments depend to a large degree on access. This is particularly true for the timber industry in Alberta since few of the operators can afford to build extensive road systems. The Wadlin Lake road, being built by the Department of Lands and Forests from Northern Alberta Development Council funds, will open up an area of timber operations with an annual cut of some 40 million fbm. There are other areas which would provide increased resource use if access could be provided or improved.

There are two very important points which need to be emphasized in regard to road construction. First, the areas under study are developing quite rapidly and co-ordination between local government units is imperative. Secondly, a good deal of attention should be given to the location of roads by an inter-departmental committee. The location of roads has numerous implications for such areas of concern as hospital and school

construction, trading area changes and telephone and power line locations. It is evident that in C.D. 15, road re-locations or new locations have affected the viability of some of the towns. It is therefore necessary for planners to consider factors other than soil conditions and construction costs in building or improving roads. Recognition should be given to social costs and external economics or diseconomics.

The magnitude of the rural road construction program is summarized below. Present inventory statistics are presented along with the proposed mileages of local and secondary roads. Note that the figures apply to only the study areas outlined in the preceding map.

Table 8 SUMMARY OF PROPOSED AND PRESENT ROAD SYSTEM
IN STUDY AREAS WITHIN C.D. 15 ^{1/}

	Present Mileage		Proposed Mileage Increases ^{3/}	
	Main Highways	Secondary & Local ^{2/}	Secondary	Local ^{4/}
County #1	137	1,776	150	1,641
M.D. 132	33	559	32	527
M.D. 133	34	305	12	293
M.D. 134	59	774	48	734
I.D. 111	-	391	13	33
M.D. 135	44	355	40	150
M.D. 136	33	441	19	221
M.D. 138	88	811	106	469
M.D. 139	-	788	101	401
I.D. 110	63	417	-	-
I.D. 123	10	143	43	-
I.D. 124	75	173	29	144
I.D. 125	48	478	80	422
I.D. 126	102	436	65	362
I.D. 129	-	112	5	40
I.D. 131	21	526	55	474
M.D. 130	99	866	78	789
TOTAL	846	9,351	876	6,700

^{1/} Bearsto et al, op. cit.

^{2/} Includes forestry roads.

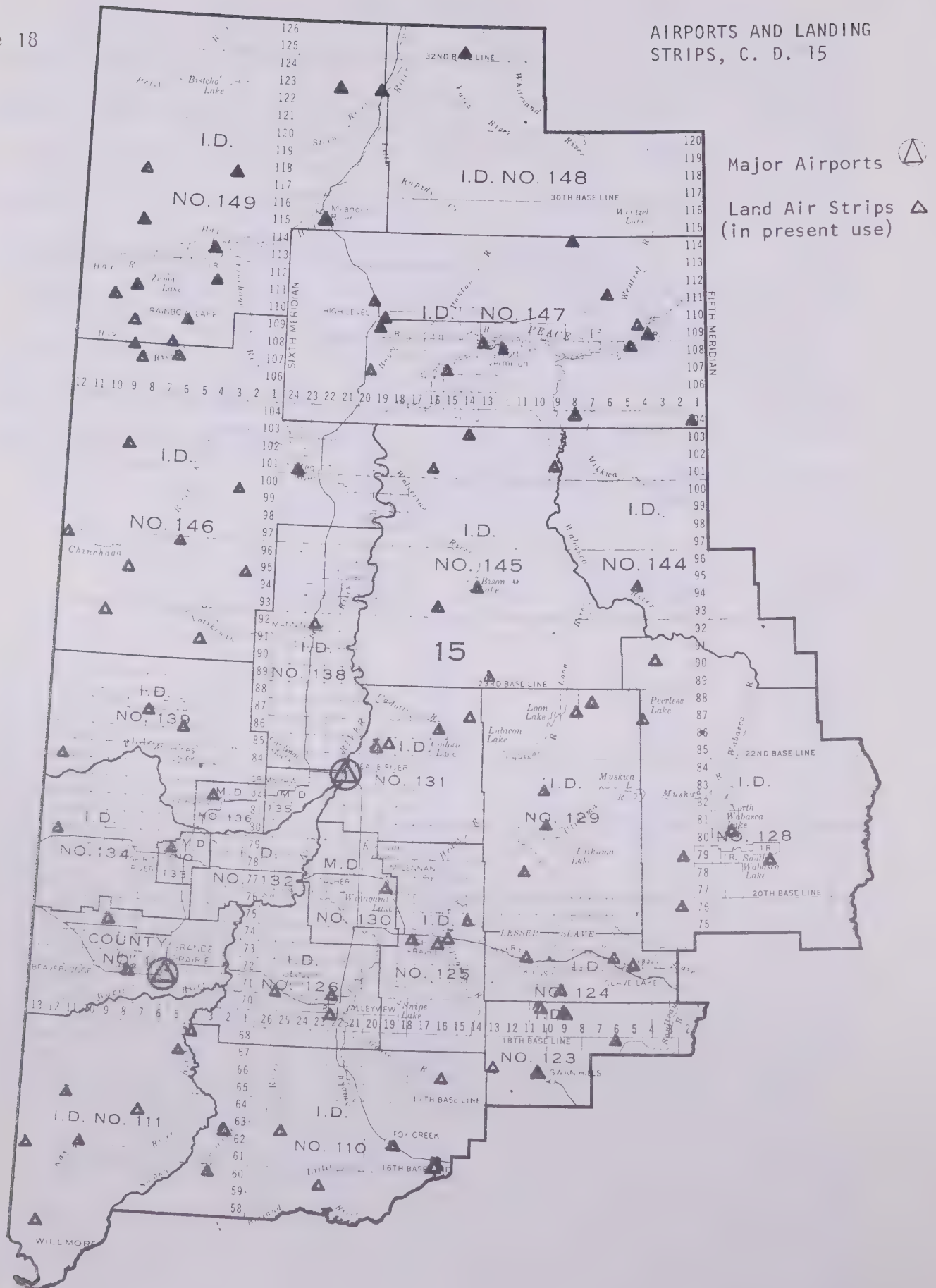
^{3/} Excludes main highway figures.

^{4/} Includes major forest access roads.

The airplane provides the primary means of transportation into a large portion of C.D. 15. Well over 100 air strips are located throughout the area, the Department of Lands and Forests cares for seventy-four. Most of the remainder have been built by oil companies, although a few have been built by individuals or lumbering companies. As well as these air strips, there are two major airports; one located at Peace River and the other at Grande Prairie. The air strips range from 900 foot grass strips to 5,000 foot runways with the majority in the 3,000 foot class. In addition, lakes provide landing sites for float-equipped planes in the summer and ski-planes in the winter. The map on the following page indicates the locations of most of the air strips.²

Figure 18

AIRPORTS AND LANDING STRIPS, C. D. 15

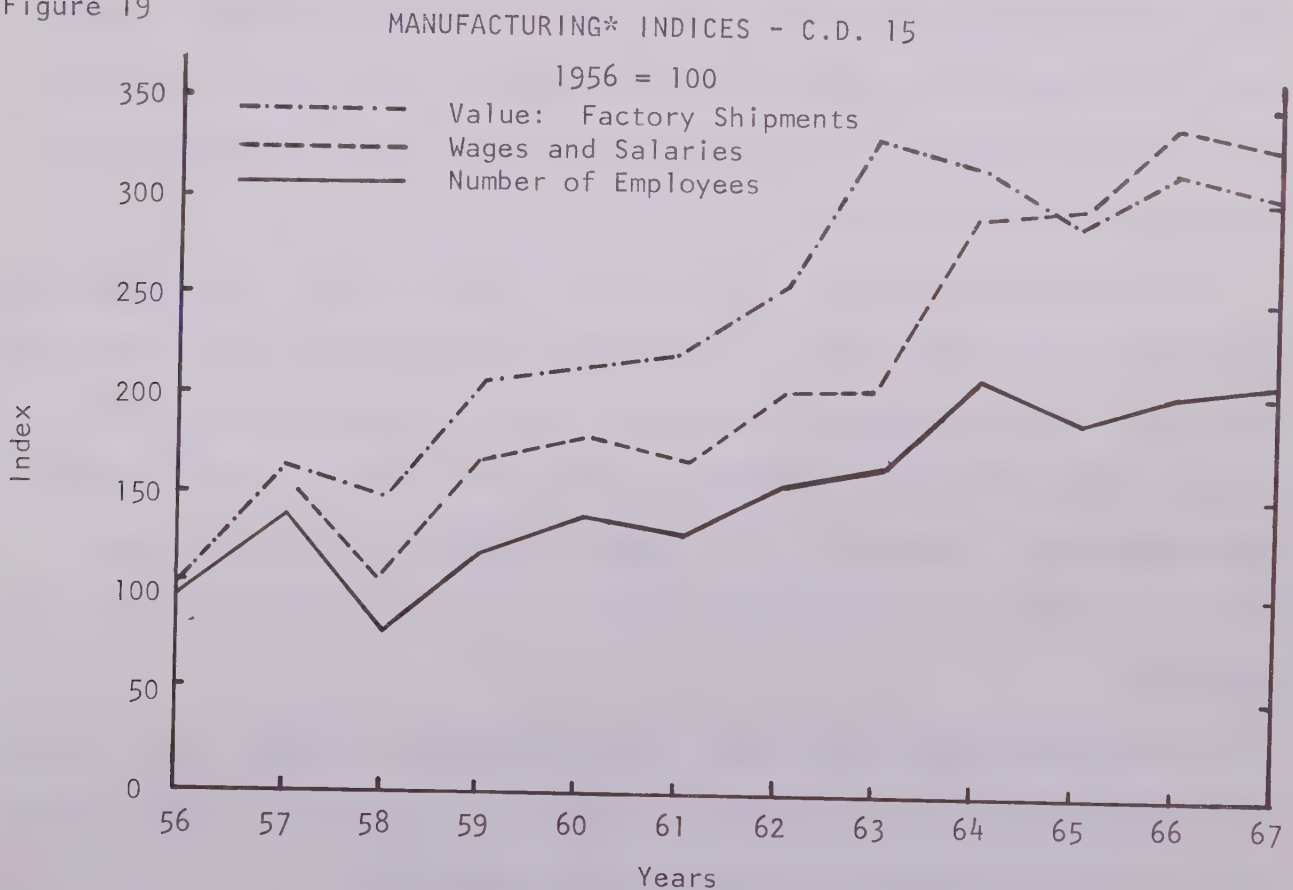


Manufacturing in C. D. 15 ^{1/}

Except for one or two cases, most of the manufacturing carried on in C.D. 15 comes from relatively small firms. The plywood mill in Grande Prairie is by far the largest operation. As well, some of the sawmills employ a fairly large labour force. The majority of manufacturing establishments (excluding sawmills and planers) supply local markets only.

As the graph indicates, manufacturing activity has been on the increase in C.D. 15 during the past 11 years. However, during the last 4 years both output, as measured by factory shipments and employment have levelled off. The figures exclude sawmills and planer mills whose total output is slightly higher than the values of 4 years ago.

Figure 19



* Excludes sawmills, and sash, door and planing mills.

^{1/} See Bigam op. cit.

From 1956 to 1967, the food and beverage firms doubled their output. Up to 1/3 of this output came from butter and pasteurizing plants. Within the next few years, little expansion will occur in these latter plants since the dairy herds are declining rapidly - from 13,000 head in 1961 to 9,000 in 1966. Other plants such as beverage manufacturers and bakeries will gradually expand production to keep pace with population increases. Similarly other firms such as machine shops, cement products firms and printing firms will expand more or less in proportion to population growth.

Any significant impact on the area's economy will come through expansion of firms exporting products from C.D. 15. For the immediate future, this will likely be forest based products such as finished lumber, pulp and plywood. In addition, there are extremely good possibilities for furniture component, veneer, and fibreboard operations using poplar as the raw material. A great deal of interest is being shown in the above possibilities and if the lumber market remains anywhere near its present high levels, then at least one or two plants will be established.

As mentioned previously, in the forestry section, there is a strong trend to establish centralized sawmill - planer mill complexes which lend themselves to permanent locations and year round work. By 1981, logging operations of any size within 125 miles to 150 miles of rail will likely be associated with these large mills. However, it still may be necessary to have some small bush mills, perhaps sawing logs into cants, for timber holdings over 150 miles from rail.

In addition to this first step in production there are many other kinds of wood products which could be produced. Perhaps as the mills get larger, they may find sufficient capital to diversify their production.

One extremely interesting possibility is the development of the Clear Hills iron deposits and subsequent production of iron pellets. The process for extracting the iron ore has been proved, patented and licensed to a company which

is using it in a plant in Windsor, Ontario. This company has indicated that it plans to build a plant in northwestern Alberta in the late 1970's.

Other establishments which are possible are fish processing, Indian crafts, specialty wood items, wild berry preserves, plus a host of other items limited only by the imagination and resourcefulness of the businessman.

There are not too many options open to encouraging development of manufacturing firms. However, some of the available ones could be expanded. For example, additional research on product design, potential markets, plant efficiency and comparative advantages could point out development possibilities. However, even if these research projects are completed, it is still necessary to wait for some enterprising person to act on the information.

MUNICIPAL FINANCE
IN C.D. 15
CITY, TOWNS AND VILLAGES

by

Leo Regehr

MUNICIPAL FINANCE IN C. D. 15;
CITY, TOWNS AND VILLAGES

Summary and Conclusions

Almost all urban centres in C. D. 15 have much higher tax rates than the average for similar centres in the province. Taxes are higher in per capita terms as well as in terms of tax rates (i.e. the amount of taxes relative to property values).

Basically, tax rates are high because municipalities buy goods or services deemed necessary or desirable but which they cannot afford because their taxable property values are relatively low. Furthermore, some projects are paid for out of present tax revenues rather than in the conventional way, through sale of debentures, a practice which distributes payments over many years.

Of the 29 incorporated urban centres in C. D. 15, the town of Swan Hills and the village of Nampa have good financial positions. Centres with difficult financial positions are Spirit River, Rycroft, Kinuso, and Berwyn.

Urban centres may improve their present financial positions or lower their mill rates by collecting tax arrears, reducing their spending, and financing more small projects through debenture issues, and placing their utilities on break-even budgets.

Introduction

Within its borders, C. D. 15 contains the city of Grande Prairie, and 28 towns and villages. The tax levels and the financial positions (in 1967) of these centres will be examined and compared with towns and villages in the whole province.

Those centres will be singled out whose tax rates appear reasonable or whose budgets appear in good control. Those centres with very high

tax rates or which have short-term loans to pay their bills will also be singled out and discussed, together with ways in which their financial positions might be improved.

Sources of Information

The Auditor's financial statements of the city, towns and villages within C. D. 15 supplied the financial information for individual municipalities for the year 1967. Copies of these statements were examined at the Municipal Inspection Branch, Alberta Department of Municipal Affairs at Edmonton. Average figures for Alberta's towns and villages were derived from compilations made by the Municipal Inspection Branch. Other sources of information will be identified with footnotes.

Tax Rates

Municipal mill rates for provincial education and health programs are near the provincial average in C. D. 15. Taxes levied entirely for local purposes, however, are about 10 mills (or \$10 per \$1000 of assessment) higher in C. D. 15 than in similar centres in Alberta. Taxes for frontage and property improvements alone are higher by at least 3 mills. These observations are illustrated in Tables 1 and 2 which follow.

Table 1
GROUPED MUNICIPAL TAX RATES
AND THE NUMBER OF CENTRES IN EACH GROUP
(Excluding Provincial Education and Health taxes,
but including frontage and improvement taxes)

<u>No. of Centres in C.D. 15</u>	<u>Tax Rates In Mills</u>
2	Under 40
6	40 - 44
7	45 - 49
5	50 - 54
2	55 - 59
4	60 - 64
2	65 and over

Alberta average tax rates, 1967 (all towns and villages) 42 mills

*Figures not available for Fox Creek

Table 2

GROUPED FRONTAGE TAX RATES
AND THE NUMBER OF CENTRES IN EACH GROUP

<u>No. of Centres</u>	<u>Tax Rates In Mills</u>
5	Under 7
6	7 - 9
6	10 - 11
-	12 - 13
4	14 - 15
6	Over 15

Alberta average frontage tax in mills, 1967 (all towns and villages) 7

*Figures not available for Fox Creek

It appears that local expenditures are not closely related to the local tax base. In other words, the ability of the people to pay taxes often does not decide what a municipality actually spends. This is suggested by the fact that as property values (per capita) decrease, mill rates for local purposes are often high. (See Table 11, Appendix.)

Can Taxes be Reduced?

Taxes which a municipality levies for provincially-sponsored services cannot be reduced, leaving most municipalities with about 28 to 30 mills which they must levy. Furthermore, every urban centre must provide some street lighting, law enforcement, garbage collection and other basic services, leaving a town with many local fixed costs which also cannot be reduced. However, some costs might be reduced at the present time and other costs might be reduced gradually in order to lower mill rates or to keep them from rising further. Budget changes which might accomplish these purposes are discussed with reference to the towns of High Prairie, Slave Lake and Berwyn. It is assumed that their future budgets would be much the same as in 1967.

1. High Prairie

Municipal mill rates in High Prairie were at 43 mills in 1967 (Table 14, Appendix). Some property owners also paid frontage taxes of about 19 mills.

However, it is interesting to note that there were few tax arrears in High Prairie in 1967 (Table 12 Col. 4) and the town enjoyed a modest cash surplus. (Table 12, Cols.2,3.)

High Prairie's rapid growth (Table 13 Col. 4) probably accounts for a portion of its expenditures on controllable costs, such as public works, recreation and community services, and contributions to the Capital and Loan Fund. These costs averaged \$58,000 over three years, and in 1967 accounted for 20 mills. (Table 12 Col.6,7)

In the short run, municipal mill rates could be lowered by about 5 mills in High Prairie if its average expenditures on controllable items were temporarily cut by about 25% or \$15,000. If the same amount or more of controllable costs could be financed by 20-year debentures, a further 5-mill cut would be possible. However, even if taxes dropped by 10 mills, High Prairie would still have comparatively high mill rates.

2. Slave Lake

Municipal mill rates in the town of Slave Lake compare favorably with other towns in Alberta. (Table 14) However, frontage taxes are equal to 36 mills, probably because of this town's rapid growth. (Table 13 Col. 4.) As a result, some property owners pay what amounts to 66 mills. In spite of these tax levels, tax arrears in Slave Lake appear to be at a reasonable level. (Table 13, Col.1.)

In the short run, taxes in Slave Lake could be lowered by about 15 mills if 25% of all outstanding taxes were collected and if controllable costs were reduced by 25%. (Table 12 Col.5,7)

A greater reliance on debenture financing for controllable costs (public works, recreation and community services and capital fund contributions) might enable the mill rate to drop another 6 mills. If the above changes could be made, taxes could drop by 20 mills temporarily, and by

5 mills or more in the long run in Slave Lake.

3. Berwyn

All property owners in Berwyn pay 83 mills on their municipal assessments, and some pay an additional 9 mills in frontage taxes. (Table 14.) Tax arrears equaled 50% of Berwyn's 1967 tax levy. Lowering its taxes by 19 mills, to the provincial average, would cost Berwyn \$8,000, which is more than the value of the budget cuts which it could make. Furthermore, Berwyn would also need an additional \$12,000, or 27 mills in tax revenues, to pay its outstanding debts. (Table 12 Cols. 1,2) It is, therefore, not possible for Berwyn to lower its taxes to the provincial average and to balance its budget at the same time.

It is suggested that Berwyn's first objective should be to regain its solvency and be able to pay its bills as they come due. In the long run, mill rates could come down through carefully-controlled spending (possibly including a greater reliance on debenture financing of smaller projects) and natural increases in the municipal assessment.

Financial Positions

The town of Swan Hills has a good financial position. (Tables 12,13.) Its cash surplus, its tax levy, and its fixed costs compare well with other centres in the province generally. The value of revenue-producing property increased more rapidly from 1965 to 1967 than in the province generally. Furthermore, the town of Swan Hills has received grants from I. D. 123, in which the town is located.

The finances of Nampa are also in good condition. (Tables 12,13.) It has a high cash surplus, and its tax levy compares well with other centres in the province. Nampa has apparently restricted its spending almost entirely to unavoidable or fixed costs.

A number of centres in C. D. 15 were unable to pay all of their bills in 1967. In other words, they were temporarily insolvent. These centres will be discussed in more detail shortly.

The normal procedure for financing projects is as follows: A cost estimate of a project is included in a centre's budget and $7\frac{1}{2}\%$ ^{1/} debentures are issued for the amount of the estimate. Should the project estimate be too low and cash reserves inadequate to cover the difference between estimated cost and actual cost, the centre would have no choice but to make a short-term loan at approximately 7% ^{2/} per annum. The law prohibits a second debenture issue for the same project.

Budgeting miscalculations of operating expenditures and revenues as well as unforeseeable circumstances may also necessitate short-term loans. However, most short-term loans of centres under discussion are small and easily repayable.

For example, the town of Peace River and the city of Grande Prairie could easily pay their temporary loans by small budgetary changes. These are outlined in Table 3.

^{1/} Debenture borrowing costs are higher than short term loan costs because lenders prefer to invest their money over short periods.

^{2/} Financing all projects at 7% is not possible because this rate is reserved for loans which are paid back over one or two years.

Table 3
SOLVENCY PLANS
FOR PEACE RIVER AND GRANDE PRAIRIE
IN 1968

	<u>Peace River</u>	<u>Grande Prairie</u>
Debts payable, Dec. 31 1967 in \$,000		
Principal	107,000*	53,000
Interest at 7%	<u>7,000</u>	<u>4,000</u>
Total Payable	<u>114,000</u>	<u>57,000</u>
Possible sources of funds for debt repayment in \$,000		
1. Natural increase in assessment at 1967 mill rates	66,000	43,000
2. 25% reduction in avoidable costs	47,000	105,000
3. Collection of 25% of tax arrears	<u>26,000</u>	<u>5,000</u>
Total of above sources of funds for debt repayment	<u>139,000</u>	<u>153,000</u>

* All figures are rounded.

The solvency plans mentioned above do not include mill rate increases, and because of this they could work only if municipal spending was temporarily cut back or at least held to 1967 levels.

The villages of Berwyn and Donnelly are in more difficult positions than are Peace River or Grande Prairie. The value of revenue-producing property has grown very slowly in Berwyn, and its mill rate is already very high. Donnelly's growth and present mill rate are favorable, but it is far behind in paying its bills. Furthermore, large amounts of money have been transferred to activities which should normally pay their own way (Table 12, col. 9).

The possible effects of certain budget changes upon Berwyn and Donnelly are outlined in Table 4.

Table 4

SOLVENCY PLANS
BERWYN AND DONNELLY - 1968

	<u>Berwyn</u>	<u>Donnelly</u>
Debts payable, Dec. 31, 1967 in \$		
Principal	12,000*	15,000
Interest at 7%	<u>1,000</u>	<u>1,000</u>
Total Payable	<u>13,000</u>	<u>16,000</u>
Possible sources of funds for debt repayment in \$000		
1. natural increase in assessment at 1967 mill rates	1,000	2,000
2. 50% reduction in avoidable costs	7,000	5,000
3. Collection of 25% of tax arrears	<u>6,000</u>	<u>7,000</u>
Total of above sources of funds for debt repayment	<u>14,000</u>	<u>14,000</u>
Remaining Surplus or (Debt) Dec. 31, 1968	<u>1,000</u>	<u>(2,000)</u>

* All figures are rounded.

Insolvency is a real problem in Kinuso and Rycroft. The budgets of Rycroft and Kinuso contain large portions of fixed expenditures which cannot be reduced. Expenditures that could be reduced would probably reduce services that are badly needed. Taxable property values have increased very little in Rycroft and Kinuso. It would therefore be desirable to continue to keep borrowing charges to a minimum and to pay cash for as many items in the budget as possible. Since budgets cannot be cut sufficiently, and the tax base is not growing, mill rate increases appear to be necessary in Rycroft and in Kinuso if their budgets are to be balanced. This is shown in Table 5. In particular Kinuso's water utility needs to be put on a pay-as-you-go basis. Its debts alone account for all of Kinuso's net cash debts.

Of the urban centres in C. D. 15 which are temporarily insolvent, Spirit River is having the most difficulty. This difficulty resulted from a few expensive projects whose costs far exceeded the money borrowed for them by debenture issues. Since additional debentures could not, by law, be issued for these projects, short-term loans had to be made to pay for their underestimated values.

These temporary loans can be renewed as they fall due, but they still must be paid off much faster than a debenture because of their lower rate of interest. As a result, although Spirit River has been growing rapidly, increases in tax revenues are needed to pay debts rather than expand the town's services.

Methods of debt repayment, and the relative effectiveness of these methods are outlined in Table 6 .

Table 5
SOLVENCY PLANS
FOR RYCROFT AND KINUSO IN 1968

	<u>Rycroft</u>	<u>Kinuso</u>
Debt payable, Dec. 31, 1967 in \$		
Principal	14,000*	14,000
Interest at 7%	<u>1,000</u>	<u>1,000</u>
Total payable on Dec. 31, 1968	<u>15,000</u>	<u>15,000</u>
Possible sources of funds for debt repayment in \$ 000		
1. Natural increase in assessment at 1967 mill rates	1,000	--
2. Collection of 25% of tax arrears	5,000	7,000
3. Mill rate increases		
10 mills	<u>8,000</u>	
15 mills		<u>7,000</u>
Total of the above sources of funds for debt repayment	<u>14,000</u>	<u>14,000</u>
Remaining surplus or (Debt) Dec. 31, 1968	<u>1,000</u>	<u>1,000</u>

* All figures are rounded.

Table 6

PARTIAL SOLVENCY PLAN
FOR SPIRIT RIVER 1968 - 1969

Debts payable, Dec. 31, 1967 in \$	
Principal	117,000 *
Interest at 7%	<u>16,000</u>
Total payable	133,000
Possible sources of funds for debt repayment in \$ 000	
1. Natural increase in assessment at 1967 mill rates	13,000
2. 50% reduction in avoidable costs using averages for 1965 + 1966	9,000
3. Collection of 25% of tax arrears	4,000
4. Tax increase of 10 mills and assuming a regular assessment increase	27,000
5. Extension of debenture financing to 50% of average controllable costs	<u>16,000</u>
Total of the above sources of funds	<u>69,000</u>
Debt remaining on Dec. 31, 1969	<u><u>64,000</u></u>

* All figures are rounded.

What Do Municipal Services Cost?

General estimates of the cost of installing the more common services in a community has been attempted here. These costs fluctuate with prices of materials, shipping charges, and how busy the contractors and architects are when the services are needed. Therefore, the following costs of public works, hospitals and schools have been selected to serve as a general guide.

Table 7 'RULE OF THUMB' COSTS OF PUBLIC WORKS ^{1/}

Type of Installation	Laid-down Cost	
	Each	Per Foot
Catch basins	\$250	
Drain leads		\$ 8.00
Curbs & gutters - concrete		\$ 3.50
Sidewalks - 5' wide		\$ 5.00
Gravel road - 36' wide		\$20.00
Sanitary sewers - 12" - 15" dia. ^{2/}		\$10.00

The rule of thumb for construction costs of hospitals of size 35-99 beds in 1967 were:^{3/}

Per Square Foot	\$ 27.00
Per Bed	\$18,000.00

^{1/} Site Development Section, Buildings Branch, Alberta Department of Public Works, Edmonton, 1968.

^{2/} Completely finished. Includes base preparation, curbs and gutters.

^{3/} Research and Development Branch, Hospitals and Hospitalization Division, Alberta Department of Public Health, Edmonton, 1968.

Table 8

ACTUAL OPERATING COSTS ^{1/}
OF SELECTED HOSPITALS (35-99 Beds)

Location	Salaries And Wages		Total Operating Costs		Beds	Per Bed
	Total \$	Per Patient Day	Total \$	Per Patient Day		
Spirit River	240,973	17.72	388,353	28.55	44	8,826
Fairview	224,217	18.06	369,046	29.72	50	7,381
High Prairie	345,521	17.85	564,771	29.18	72	7,844
McLennan	206,738	16.47	359,260	28.62	59	6,089

Table 9

SELECTED ALLOWANCES ^{2/}
PAID BY SCHOOL FOUNDATION PROGRAM FUND

Grades	Amount
I - VI inclusive	\$255
VII - IX inclusive	310
X - XII inclusive	360
Teachers:	Amount
Less than 2 years training	\$ 900
2 years but less than three	1,600
3 years but less than four	2,400
Four years but less than five	3,400
Five years but less than six	3,600
Six or more	3,900
Transportation & Maintenance of Pupils	100%

^{1/} Research and Development Branch, Hospitals and Hospitalization Division, Alberta Department of Public Health, Edmonton, 1967.

^{2/} School Foundation Program Fund Regulations, Alberta Department of Education, Edmonton, 1967.

Table 10 MINIMUM PHYSICAL LIFE OF SCHOOL BUILDINGS 1/

<u>Type:</u>	<u>Years</u>
Reinforced concrete, steel, glue laminated members, masonry, or any combination of such materials	50
Wood Frame (stationary)	35
Portable	20
Amalgamated (combination of older buildings)	15

1/ Regulations Pursuant to the School Buildings Act, Alberta Department of Education, Edmonton, 1968.

APPENDIX

Table 11 SELECTED FINANCIAL INFORMATION 1967^{1/}

<u>C.D. 15</u>	<u>Total Levy</u>	<u>Operating Expenditures</u>	<u>Municipal Assessments</u>	<u>Equalized^{2/} Assessments</u>
	--- \$000 ---			
Beaverlodge	102	160	1,445	1,359
Donnelly	24	45	309	286
Eaglesham	13	17	175	238
Fairview	218	283	3,049	2,735
Falher	96	156	1,314	1,134
Fox Creek (New Town)*		5	-	167
Girouxville	41	56	548	456
Grande Prairie	1,469	2,171	18,351	17,656
Grimshaw	172	235	1,926	1,812
Hay Lakes	17	20	296	272
High Level	84	132	1,832	993
Hines Creek	51	71	668	637
Hythe	49	79	649	623
Kinuso	30	38	458	323
Manning	106	176	1,339	1,339
McLennan	86	128	1,152	1,152
Nampa	28	41	435	376
Peace River	496	850	7,255	6,605
Rainbow Lake	1	619	174	146
Rycroft	58	91	758	638
Sexsmith	60	80	768	733
Spirit River	99	251	1,215	1,234
Swan Hills	79	192	1,143	1,078
Valleyview	147	216	2,029	1,714
Wanham	28	40	356	284
Wembley	22	34	263	224
Alberta - Towns	19,165	28,521	267,189	255,586
- Villages	4,499	6,279	64,507	60,921

*New Towns under development had no assessment or taxation in 1967.

^{1/} Sources: Audited financial statement published by the city, towns and villages within C.D. 15 for the year ending December 31, 1967 and the Alberta Municipal Councillor, June-July 1968, Equalized Municipal Assessments, Alberta Department of Municipal Affairs, Edmonton.

^{2/} Equalized assessments include the value of any government as well as private property. However, they assume lower values. Therefore, equalized assessments are generally lower than municipal values upon which taxes are levied.

Table 12

SELECTED FINANCIAL INFORMATION 1967

C. D. 15	Solvency Expressed As Cash Surplus or (Debt) 1/			25% of all Tax Arrears 2/		50% of Average Controllable Costs 3/		Tax value of A 10-mill Levy 4/	Loans to Utilities or other Funds 5/
	1	2	3	4	5	6	7	8	9
	In \$ Thousands	In Mills	As a % of the Levy	In \$ Thousands	In Mills	In \$ Thousands	In Mills	In \$ Thousands	In \$ Thousands
Beaverlodge	18	12	17	3	2	17	12	14	-
Berwyn	(12)	27	26	6	13	7	16	4	-
Donnelly	(15)	49	62	7	23	5	16	3	24
Eaglesham	7	40	57	1	6	3	17	2	-
Fairview	55	15	25	9	3	21	7	28	34
Falher	24	18	25	5	4	19	14	12	7
Fox Creek (N.T.)*	479	-	-	-	-	-	-	-	-
Girouxville	15	27	37	5	9	7	13	5	17
Grande Prairie	(53)	29	4	5	-	209	11	166	10
Grimshaw	33	17	19	13	7	18	9	19	19
Hay Lakes	8	27	48	-	2	3	10	3	2
High Level	37	36	44	6	6	9	9	10	-
High Prairie	38	13	16	8	3	29	10	26	37
Hines Creek	15	22	29	6	9	7	10	7	-
Hythe	26	40	53	3	5	4	6	6	-
Kinuso	(14)	31	47	7	15	3	7	4	14
Manning	3	2	31	10	7	18	13	12	25
McLennan	1	9	14	12	10	11	10	11	3
Nampa	26	60	90	1	2	1	2	4	-
Peace River	(107)	15	22	26	4	94	13	65	92
Rainbow Lake 6/	(920)	-	-	-	-	-	-	2	1,263
Rycroft	(14)	18	24	5	7	6	8	6	2
Sexsmith	24	31	40	4	5	9	12	8	37
Slave Lake	47	37	41	10	9	16	13	12	7
Spirit River	(117)	96	118	4	3	9	7	12	35
Swan Hills	15	13	19	5	4	37	32	11	84
Valleyview	29	14	20	22	11	15	7	17	-
Wanham	32	9	115	2	6	2	6	3	-
Wembley	19	72	87	2	8	3	11	3	-
Alberta									
All Towns	-	11	15	-	4	-	12	-	-
All Villages	-	33	48	-	7	-	18	-	-
All Towns and Villages	-	15	21	-	5	-	11	-	-

*New Towns under development had no assessment or taxation in 1967.

1/ A cash surplus or debt is the difference between a municipality's ready cash and the bills it must pay in the near future, it is the difference between cash assets and cash liabilities. Cash assets include the bank balance, short-term investments, accounts receivable, and money owing from other municipalities, the province, or the federal government. Cash liabilities include bank overdrafts, temporary bank loans, accounts payable, debentures due, and bills already due to other municipalities, the province, or to the federal government.

2/ As a general estimate, a municipality could probably collect 25% of all taxes receivable if efforts were made to collect all outstanding taxes.

3/ Some controllable costs can be eliminated entirely, others can be delayed for a short time. The controllable costs of all municipalities were averaged over three years except in the case of Spirit River for which 1965 and 1966 were used. A 50% reduction in the average costs is considered to be a maximum reduction for a year or two.

4/ This is the value of a 10-mill levy on the municipal assessment (net of business tax assessments).

5/ If utilities or other funds lose money, their deficits are often covered out of General Revenues.

6/ The new town of Rainbow Lake has almost \$1 million in cash debts, but these were supervised and are guaranteed by the province. They were obtained to provide essential services, and will be paid for by debentures after the town becomes more established.

Table 13

SELECTED FINANCIAL INFORMATION 1967

	Tax Arrears	Revenue from 10% Increase In Municipal Assessment ^{1/}	Average Annual Increase For each \$100 of Equalized Assessment ^{2/} 1965 - 1967	1967 Operating Expenditures ^{3/}	
	1	2	3	4	5
C. D. 15	As a % of the Levy	In \$ Thousands	In \$ Thousands	\$ or %	Fixed %
Beaverlodge	13	14,000	9	7.50	77
Berwyn	49	22,000	4	2.50	75
Donnelly	112	27,000	2	9.50	68
Eaglesham	24	3,000	1	-	69
Fairview	16	35,000	22	2.50	87
Falher	20	19,000	8	9.00	66
Fox Creek (N.T.) ^{4/}	-	-	-	-	48
Girouxville	45	18,000	4	6.00	82
Grande Prairie	13	195,000	121	3.50	81
Grimshaw	31	53,000	14	7.00	80
Hay Lakes	11	2,000	2	-	90
High Level	30	25,000	7	17.50	72
High Prairie	13	31,000	21	9.00	81
Hines Creek	46	23,000	4	5.50	79
Hythe	22	11,000	5	2.50	88
Kinuso	96	29,000	3	- 1.50	85
Manning	37	39,000	9	13.00	83
McLennan	55	48,000	7	11.50	76
Nampa	21	6,000	2	10.00	94
Peace River	21	102,000	43	15.50	76
Rainbow Lake	-	-	-	-	48
Rycroft	36	20,000	5	1.00	84
Sexsmith	24	14,000	5	2.00	78
Slave Lake	35	40,000	7	40.40	79
Spirit River	16	16,000	9	7.50	52
Swan Hills	25	20,000	7	9.50	72
Valleyview	60	88,000	13	10.50	83
Wanham	30	8,000	2	2.50	89
Wembley	31	7,000	2	3.00	78
<u>Alberta</u>					
All Towns	25	-	-	5.00	75
All Villages	42	-	-	1.00	81
All Towns and Villages	28	-	-	4.00	76

^{1/} This assumes that mill rates are those which are given in Table ,* for 1967. Frontage taxes are not included.

^{2/} Includes government property, which provides grants in lieu of taxes. The column therefore, shows the increase in the assessed value of all revenue producing property (including pipe and power lines) within a municipality. See also footnote to Appendix.

^{3/} Controllable costs are those which can be reduced or delayed. Fixed costs are those which the municipality cannot control, such as requisitions for the School Foundation Program Fund.

^{4/} New towns under development had no assessment or taxation in 1967.

Table 14

ASSESSMENT AND LEVY COMPARISONS FOR 1967 ^{1/}

Urban Centres (Ranked by 1967 Assessments Per Capita)	Property Assessment Per Capita \$	Property Levies in Mills					
		For Municipality			For the Province (Health and Education)	Total Levy	
		Total	Frontage	Other		*	**
Rainbow Lake	460	2	-	2	-	2	2
Fox Creek (N.T.) ^{2/}	650	72	-	72	-	72	72
Eaglesham	720	72	-	72	-	72	72
Slave Lake	710	66	36	30	25	55	91
Swan Hills	750	41	4	37	28	65	69
Wembley	840	55	15	40	30	70	85
Kinuso	970	40	8	32	26	58	66
McLennan	1,010	51	10	41	24	65	75
Berwyn	1,020	61	9	52	31	83	92
Spirit River	1,070	51	11	40	31	71	82
Valleyview	1,110	46	7	39	26	65	72
Wanham	1,210	54	19	35	25	60	79
High Prairie	1,210	62	19	43	29	72	91
Donnelly	1,240	50	11	39	29	68	79
Beaverlodge	1,290	43	10	33	28	61	71
Grimshaw	1,290	60	18	42	29	71	89
Hythe	1,300	45	5	40	30	70	75
Rycroft	1,310	49	15	34	27	61	76
Manning	1,310	50	15	35	29	64	79
Nampa	1,370	40	17	23	25	48	65
Peace River	1,400	42	9	33	26	59	68
Falher	1,400	48	10	38	25	63	73
Hines Creek	1,450	40	10	30	36	66	76
High Level	1,510	59	16	43	22	65	81
Fairview	1,580	45	-	45	27	72	72
Sexsmith	1,580	48	8	40	30	70	78
Grande Prairie	1,580	60	14	46	30	66	80
Girouxville	1,610	49	8	41	25	66	74
Hay Lakes	1,660	27	4	23	29	52	56
Alberta							
All Towns	1,466	43	7	36	29	65	72
All Villages	1,426	40	8	32	30	62	70
Towns and Villages	1,460	42	7	35	29	64	71
Cities	1,966	34	8	26	29	55	63

* Municipal mill rate which excludes frontage taxes.

** Total levy in mills, including frontage taxes.

^{1/} Business taxes are not included in assessments or tax levies.

^{2/} New towns under development had no assessment or taxation in 1967. Property assessment per capita is estimated by using equalized assessment.

REFERENCES

1. The Audited Financial Statements published by the city, towns and villages within C. D. 15 for the year ending December 31, 1967.
2. Alberta Department of Municipal Affairs, Edmonton, 1968.
3. The Alberta Municipal Councillor, June-July, 1968, Equalized Municipal Assessments, Alberta Department of Municipal Affairs, Edmonton.
4. Site Development Branch, Alberta Department of Public Works, Edmonton.
5. Research and Development Branch, Hospitals and Hospitalization Division, Alberta Department of Public Health, Edmonton.
6. School Foundation Program Fund Regulations, Alberta Department of Education, Edmonton, 1967.
7. Regulations Pursuant to the School Buildings Act, Alberta Department of Education, Edmonton, 1968.

PEOPLE OF INDIAN ANCESTRY
IN C.D. 15

by

C. A. Sauvé

PEOPLE OF INDIAN ANCESTRY IN C.D. 15

Introduction ^{1/}

In C.D. 15, people of Indian Ancestry make up 10% - 15% of the total population. Because of their distinct and special characteristics, an overall socio-economic development plan, if it is to succeed, has to take into account these special cultural and social attributes. The main bar to socio-economic adjustment in native communities seems to become evident when an attempt is made to reconcile the "white man's" highly individualistic, achievement-oriented and materialistic culture with the more-or-less tribal culture of the native community. Here individual economic success may mean a loss of culture and social alienation. In other words, in order to succeed financially in the society at large, a person must adopt a certain mode of behavior, viz. individual aggressiveness, perseverance, postponement of immediate gratification in favour of greater gratification later. Adoption of these attributes would "disqualify" the native as a member of his relatively closely-knit community because he would be "different" and consequently, he would become socially alienated.

The enigma, i.e. a choice between social alienation and financial success, is certainly reflected in the feelings of frustration and despair in native communities. Many adults have had no formal education

^{1/} For a more detailed discussion, see Sauve, C.A.; Theoretical Considerations for Socio-Economic Development Among Native People, Research and Planning Division, Human Resources Development Authority, Edmonton, 1969.

and most have had very little. As a result, it is difficult to imagine how a father who has benefitted insignificantly from economic and intrinsic value of formal education could instill favourable attitudes toward education in his children. Consequently, there is a high drop-out rate in predominantly native schools and the children drop out earlier than those in Alberta generally. To magnify the problem, natives have relatively large families. With a low educational level, the bread-winner's employment opportunities are limited and top-paying jobs are out of his reach; yet there is a larger family depending on him for food, clothing and shelter than on the average Alberta bread-winner.

It is becoming increasingly more evident that extensive motivational and educational programmes will have to be instituted in native communities; programmes that take into account the special social problems and cultural characteristics of the residents.

The native population of C.D. 15 may be divided into three groups:

- 1) treaty Indians
- 2) Metis in colonies
- 3) non-treaty Indians and Metis not on colonies.

Indian Affairs Branch has reliable population statistics on treaty Indians, the Metis Rehabilitation Branch has statistics on Metis colonies, but the population in the last group can only be estimated.

In his study of Metis people in Alberta, Dr. B.Y. Card has quoted estimates of Alberta's Metis population in 1960 ranging from 10,000 to 32,000.^{1/} If 80% of these people may be considered living in Northern Alberta, 40% in C.D. 15 and 40% in C.D. 12, the Metis population of C.D. 15 would be from 4,000 to 12,800.

The 1961 D.B.S. census gives a much lower number than that which could be derived from Dr. Card's estimates, which is to be expected, because many people of Indian ancestry do not report their ancestry to interviewers. The 'Indian Ancestry' population in C.D. 15, according to the Dominion Bureau of Statistics census of 1961, was 7,959. In 1961, 1,017 Metis lived in colonies and there were 4,101 treaty Indians in C.D. 15. Therefore, the total non-treaty Indians and Metis not in colonies in the census division was 2,841. (See Table 1.)

Table 1 POPULATION OF INDIAN ANCESTRY IN C.D. 15, 1961 ^{2/}

Group	Population
Metis in Colonies	1,017
Treaty Indians	4,101
	2,841 (1961 Census)
Others of Indian Ancestry	3,000 - 11,800 (B.Y. Card Est.)
TOTAL	7,959 (1961 Census)
	8,118 - 10,918 (B.Y. Card)

1/ Card, B.Y. et al; The Metis in Alberta Society, The Alberta Tuberculosis Association, Edmonton, October, 1963, p. 13.

2/ Abstracted from records of the Metis Rehabilitation Branch, Alberta Department of Welfare and Indian Affairs Branch, Canadian Dept. of Indian Affairs and Northern Development. D.B.S.; Vol. 1.2-5; Population, Ethnic Group, Table 37, Ottawa, 1966. Tabulated by author.

Age distributions are available for the native population of Alberta. The following table is a comparison of the distribution by age of the native population of Alberta and Alberta's total population:

Table 2 POPULATION BY AGE GROUPS, ALBERTA - INDIAN ANCESTRY^{1/}
AND TOTAL POPULATION 1961

Age Group	Indian Ancestry		Total Alberta	
	No.	%	No.	%
0 - 4	5,726	20.0	179,888	13.5
5 - 9	4,526	15.9	159,053	11.9
10 - 14	3,678	12.9	130,383	9.8
15 - 19	2,914	10.2	99,004	7.4
20 - 24	2,299	8.1	89,154	6.7
25 - 34	3,412	12.0	192,571	14.4
35 - 44	2,097	7.3	172,623	13.0
45 - 54	1,630	5.7	128,547	9.7
55 - 64	1,167	4.1	87,643	6.6
65 - 69	411	1.4	31,724	2.4
70 +	694	2.4	61,354	4.6
TOTAL	28,554	100	1,331,944	100

The proportion under 25 is larger for the native population of Alberta than for Alberta's total population. This is caused by a higher birth rate among native people. Assuming that the birth rate on Indian Reserves of the Lesser Slave Lake agency is representative of native people in C.D. 15, the birth rate among these people in 1967 was 49.9 per 1,000, compared to 20.9 for Alberta (1966), or in comparative terms, the birth rate in the native population is 2.39 times that of the population of Alberta generally.

^{1/} D.B.S.; Population Ethnic Groups by Age Groups, (Vol. 1.3-2), Table 82. Tabulated by author.

The proportion of people in the productive ages (20 - 64) is consistently lower for natives than for the total population. In the total population 50.4% are in their productive years; however, in the native population, only 37.2% are in those years.

A higher mortality rate is also evident among the native population, by the lower proportion in the upper age groups. Again, for the Indian reserves in the Lesser Slave Lake agency the mortality rate in 1967 was 7.0 per 1,000 compared to 6.6 per 1,000 for Alberta. The average age at death on these reserves in 1967 was only 43 years, considerably lower than for Canadians generally (1965), 62 for males and 65 for females.

The educational levels of native adults in C.D. 15 are compared with the educational levels of adults in the total Alberta population in the following table:

Table 3 EDUCATIONAL LEVEL OF ADULTS - TOTAL POPULATION^{1/}
OF ALBERTA AND NATIVES IN C.D. 15, 1961

Educational Level	Alberta		Natives in C.D. 15	
	No.	% of Total	No.	% of Total
None	2,766	0.3	1,310	33.3
Per 1	1,001	0.1	2	0.0
1 - 4	44,866	5.8	1,179	30.0
5 - 7	253,959	32.7	1,289	32.8
8 - 9	190,916	24.6	119	3.0
10	87,995	11.3	19	0.5
11	96,307	12.4	10	0.2
12	43,479	5.6	4	0.1
Some U.	31,882	4.1	2	0.1
U. Degree	24,067	3.1	1	0.0
TOTAL	777,238	100	3,935	100

^{1/} D.B.S.; 1961, (unpublished data). Tabulated by author.

Only 0.3% of adults in the total population of Alberta have no education, while 33.3% of native adults in C.D. 15 have had no education. Among natives in C.D. 15, 63.3% of adults have Grade 4 or less; for Alberta, only 6.3% of adults have an education of Grade 4 or less. Only 0.8% of native adults in C.D. 15 have an educational level of Grade 10 or higher, 36.5% of Albertans have attained this level.

Statistics are available on school attendance among native children in Alberta. In the total population of Alberta, 66.8% of school-aged children (5-24) attend school; however, of native children, 55.7% in Alberta of school age attend school. If we may assume that the Alberta rate of attendance is desirable for native children in Alberta, 11.1% more native children, or 1,490, should be attending school. (See Table 11 .)

Table 4 SCHOOL ATTENDANCE ALBERTA - TOTAL POPULATION
AND NATIVE POPULATION, 1961

	<u>School Age (5-24)</u>	<u>No. Attending School</u>	<u>%</u>
Total Population	477,594	319,150	66.8
Native Population	13,417	7,472	55.7

The school dropout rate among native children in C.D. 15 is higher than the Alberta average. For a selection of schools of the Northland School Division, having predominately native enrolment, the percentage of students leaving school (1965 school year) was 7.0%; for Alberta only 3.7% of students left school.

Native children have a high dropout rate, and are also dropping out earlier than the average for Alberta. Among native children in C.D. 15,

1/ D.B.S.; Population Ethnic Groups by Age Groups, Vol. 1.3-2, 1961, Table 82, (unpublished data). Tabulated by author.

6.3% of students leave before Grade 10 while for all Alberta schools, 0.66% of students leave before Grade 10. (See Tables 5 and 6 .)

Table 5 STUDENTS LEAVING SCHOOL FOR ALL DESTINATIONS^{1/}
SELECTED SCHOOLS IN C.D. 15 WITH PREDOMINATELY
NATIVE ENROLLMENT, 1965

<u>School</u>	<u>Enrolment</u>	<u>Total Leaving</u>	<u>% Leaving</u>
Desmarais & Mistassini	233	17	7.6
Trout Lake	36	3	8.3
Atikameg	95	4	4.2
Utikyma	84	9	10.7
Loon Lake	29	-	-
Little Buffalo	60	2	3.3
Martin River	18	1	5.6
Keg River	112	5	4.5
Paddle Prairie	103	6	5.8
Caracajou	21	2	9.5
Fox Lake	103	5	4.8
Steen River	15	2	13.3
Ft. Vermilion R.C.	209	22	10.5
TOTAL/AVERAGE	1,108	78	7.0

^{1/}Abstracted from records of Alberta Department of Education, Edmonton, 1968.
Tabulated by author.

Table 6 STUDENTS LEAVING SCHOOL BEFORE GRADE 10, ALBERTA SCHOOLS AND
SELECTED NSD SCHOOLS IN C.D. 15 WITH
PREDOMINATELY NATIVE ENROLMENT, 1965

Grade	Alberta	% of Enrolment	Selected Schools	% of Enrolment
-7 Boys	104		8	
Girls	<u>56</u>		<u>3</u>	
Total	160	0.04	11	1.0
7 Boys	197		18	
Girls	<u>103</u>		<u>6</u>	
Total	300	0.08	24	2.2
8 Boys	382		5	
Girls	<u>222</u>		<u>8</u>	
Total	604	0.17	13	1.2
9 Boys	774		6	
Girls	<u>568</u>		<u>16</u>	
Total	1,342	0.37	22	2.0
TOTAL	2,406	0.66	70	6.3

In his survey Indians and the Law, Dr. Gilbert Monture has found that there is a disproportionately high crime rate among native people in Canada. The following table shows the proportion of native people admitted to Alberta correctional institutions during August, 1966.

1/ Abstracted from records of Alberta Department of Education, Edmonton, 1968. Tabulated by author.

Table 7 ADMISSIONS TO ALBERTA CORRECTIONAL INSTITUTIONS^{1/}
AUGUST, 1966

	<u>Total Admissions</u>	<u>Indians or Metis</u>	<u>% Native</u>
Fort Saskatchewan (M)	648	181	28
Fort Saskatchewan (F)	109	81	74
Lethbridge	318	208	66
Calgary	563	88	16
TOTAL	1,638	558	29

The same study also showed that 15.9% of prisoners in the Saskatchewan Federal Penitentiary (December 31, 1965) were of Indian ancestry.^{2/} Most Indians and Metis were committed for liquor infractions or crimes involving liquor. The report states: "For Indians, however, the number of liquor infractions is so great that it almost excludes other kinds of 'crime'. The comments of the field staff all emphasize this point:

Alberta:

The magnitude of the Indian problem is obvious - at a minimum, seven times the committal rate of non-Indians. The pattern of offences shows little variety."^{3/} (i.e. mostly liquor infractions).

^{1/} Monture, Dr. Gilbert C.; Indians and the Law, The Canadian Corrections Association, Ottawa, August, 1967, p. 45.

^{2/} ibid p. 46.

^{3/} ibid pp. 24 - 25.

TREATY INDIANS IN C.D. 15

Introduction

A great deal of information is available on treaty Indians of C.D. 15 from the records of the federal government's Indian Affairs Branch. Unless otherwise annotated, the reader may assume that the sources of the following statistical data were these records.

The population characteristics of treaty Indians differ, markedly from the characteristics of Alberta's population generally: the families are larger; there are more people in the dependent age groups; the illegitimacy rate is higher and the educational attainments are lower.

There are many undeveloped resources on the reserves but the main one is agricultural land. A fuller and more detailed analysis of resources on some of the reserves can be found in studies by Frank E. Price and Associates which are listed in the appropriate portion of this report. Generally the resources are underutilized in that ranchers' herds and farm acreages are too small to provide an adequate income. Those men who get their livelihood from such occupations as trapping and fishing do not earn adequate incomes and must supplement these from other sources.

Besides the social problem that manifests itself in the form of a high illegitimacy rate, welfare payments are high and the crime rate (mostly infractions dealing with alcohol) is very high. The age at death of treaty Indians is much lower than the national average.

Human and Physical Resources

The treaty Indian population in C.D. 15 was 5,511 in 1967. Of this total 4,018 lived on reserves and 1,493 lived off the reserves. The corresponding percentages for these two groups were 72.9% and 27.1%, respectively. The proportion of treaty Indians in C.D. 15 who did not live on a reserve was higher than the proportion for C.D. 12 and for Alberta generally. (See Table 8.)

Table 8
PERCENTAGE OF TREATY INDIANS LIVING
ON AND OFF RESERVES IN ALBERTA, C.D. 12 and C.D. 15
1967

	<u>On Reserves</u>	<u>Off Reserves</u>	<u>Total</u>
Alberta	82.8%	17.2%	100%
C.D. 12	81.0%	19.0%	100%
C.D. 15	72.9%	27.1%	100%

The total treaty Indian population for Alberta in 1967 was 25,658. Out of this total 21.5% were in C.D. 15.

The following is a tabulation of Alberta's treaty Indians by selected age groupings. For comparison, the total population of Alberta is also tabulated:

Table 9
POPULATION CLASSIFIED BY AGE GROUP
TREATY INDIANS AND TOTAL ALBERTA POPULATION 1966 ^{1/}

	<u>Treaty Indians</u>	<u>% of Total</u>	<u>Total Population</u>	<u>% of Total</u>
0- 5	6,124	24.9	209,476	14.3
6-15	6,957	28.3	327,090	22.4
16-20	2,439	9.9	123,600	8.4
21-64	8,183	33.3	699,027	47.8
65-69	314	1.3	35,195	2.4
70+	570	2.3	68,815	4.7
All Ages	24,587	100	1,463,203	100

^{1/} I.A.B. and D.B.S., Advance Bulletin; Population by Age Groups, Table 2.

From Table 9 , it is evident that the age make-up of the two populations differs considerably. In the treaty Indian population, there are more individuals in the younger age groups and fewer in the older age groups. But perhaps the most significant difference in the two populations, is in the intermediate age group, the productive ages, 16 to 64 years. Of the treaty Indian population, 43.2% were in their productive ages compared to 56.2% of Albertans in the same group. This unfavourable ratio of production to dependent ages has serious implications for economic development in Indian communities i.e. there are fewer people to earn a livelihood and more people depending on them for food, clothing, shelter, etc.

The table on the following page contains a list of Indian bands and reserves in C.D. 15, with their populations on and off the reserve.

The treaty Indian population for C.D. 15 is given in the table below for 1960, 1961, 1966, 1967 and 1968. During the eight year period, the population increased by 1,423 people, from 4,302 to 5,725. The average percent annual increase was 3.91%.

Table 10 TREATY INDIAN POPULATION
 C.D. 15, 1960 - 1968

<u>Year</u>	<u>Population</u>
December 31, 1960	4,302
1961	4,460
December 31, 1966	5,444
1967	5,655
March 31, 1968	5,725

Using these statistics as a basis for a linear projection, it would appear by 1980, the treaty Indian population should be approximately 8,275 people. (See Figure 1 .) (This projection assumes no change in past trends.)

Figure 1
TREATY INDIAN POPULATION
C.D. 15 1960 - 1968
With Projections to 1980

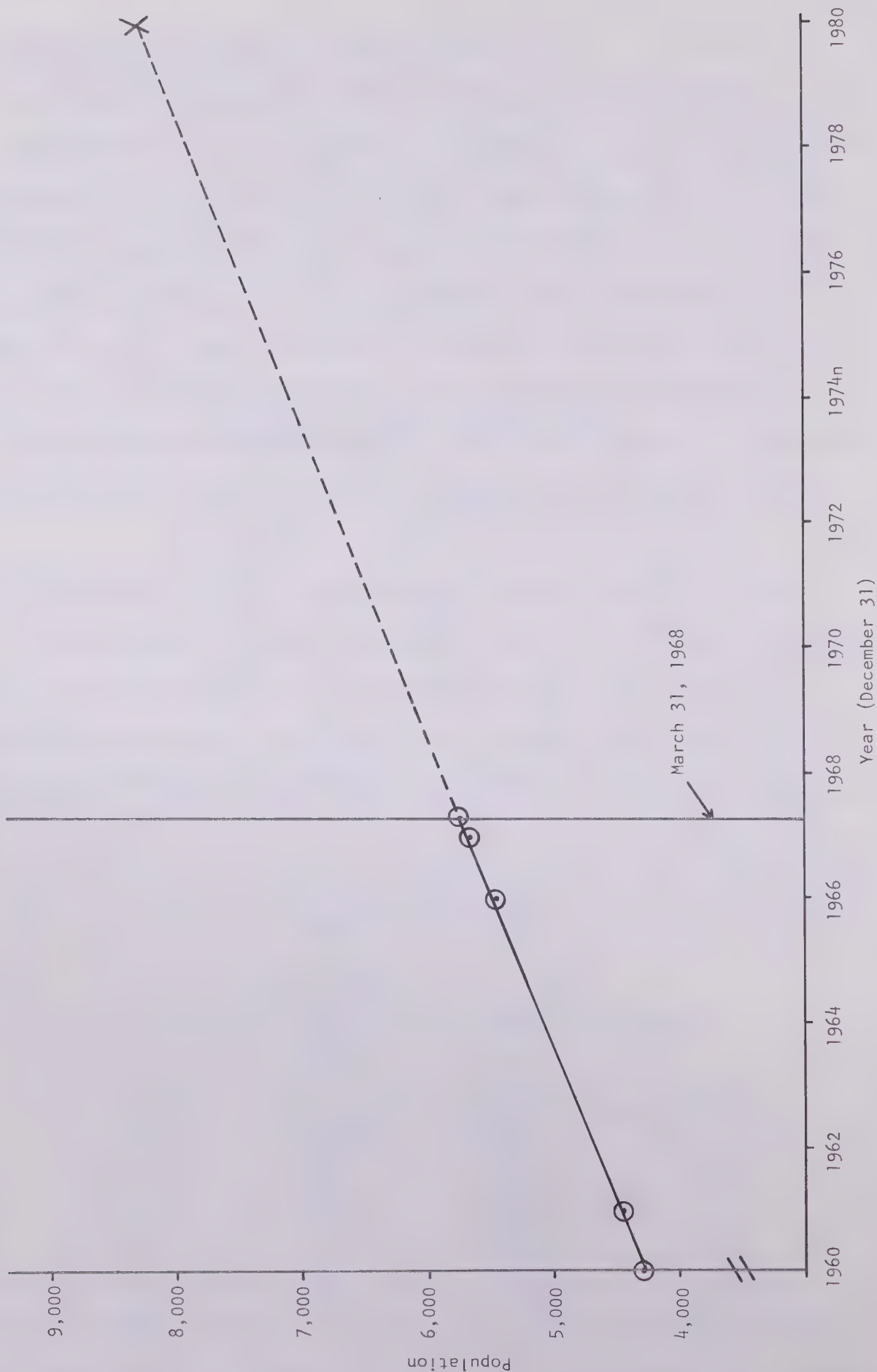


Table 11
POPULATION BY INDIAN BAND AND RESERVE
C.D. 15 - 1967

Band	Reserve	Population on Reserve	Population off Reserve	Total Population
Slave	Hay Lakes	610	-	610
	Zama Lake	-	-	-
	Amber River	-	-	-
	Upper Hay River	240	-	240
	Bushe River	25	-	25
	Bistcho Lake	-	57	57
	Jackfish Pt.	-	57	57
Little Red R.	Jean d'Or	130	-	-
	Fox Lake	416	224	770
Boyer River	Boyer River	130	-	-
	Childs Lake	80	41	251
Tallcree	Beaver River	20	-	-
	Tallcree Prairie 173	-	129	-
	Tallcree Prairie 173A	30	-	179
Grouard	Freeman	3	42	45
	Halcro	-	-	-
	Pakachan	-	-	-
Sawridge	Sawridge 150G	-	-	-
	Sawridge 150H	29	10	39
Bigstone (Wabasca)	Bigstone 166	-	-	-
	Bigstone 166A	285	205	490
	Bigstone 166B	190	120	310
	Bigstone 166C	62	5	67
	Bigstone 166D	145	83	228
Horse Lake	Horse Lake	70	29	99
	Clear Hills	-	-	-
Whitefish Lake	Whitefish Lake 155	-	-	-
	Whitefish Lake 155A	320	72	392
Sucker Creek	-	272	140	412
Duncans	Peace River Crossing	36	3	39
Lubicon Lake*	-	-	51	51
Swan River	Assineau River	-	-	-
	Swan River	91	44	135
Driftpile	-	330	116	446
Sturgeon Lake	Sturgeon Lake 154	-	-	-
	Sturgeon Lake 154A	504	65	569
	Sturgeon Lake 154B	-	-	-
TOTALS		4,018	1,493	5,511

* No reserve allotment.

The Indian families in C.D. 15 tend to be larger than Alberta families generally and also larger than the average for C.D. 15. The average size of Indian families in C.D. 15 was 5.8 persons in 1967, compared to 3.9 persons for Alberta and 4.5 persons for C.D. 15. The number of persons per household among C.D. 15 Indians (6.3) is nearly twice the number for Alberta (3.6).

The illegitimacy rate is high in the treaty Indian population, especially on some reserves in the census division. In 1967, 16.9% of all children under 21 years of age were illegitimate. The percentage illegitimacy among children under 21 is equivalent to the average annual illegitimacy rate for the past 21 years. The illegitimacy rates for Alberta and C.D. 15 for the past 11 years are 6.9% and 10.6%. These figures would be lower if the averages were taken back another 10 years. Some characteristics of families on Indian Reserves in C.D. 15 are given in the table on the following page.

Detailed evaluations of the resources on several reserves in C.D. 15 have recently been completed by Frank. E. Price & Associates Ltd. for the Alberta Region of the Indian Affairs Branch. The bands and reserves studied are the following: Boyer River Band: Boyer River Reserve, Childs Lake Reserve; Tallcree Band: Beaver Ranch Reserve, Tallcree Reserves #'s 173 and 173A; Little Red River Band: Jean d'Or Prairie Reserve, Fox Lake Reserve; Sucker Creek Reserve; Driftpile Reserve; Swan River Band: Swan River Reserve and Assinneau River Reserve.

Table 12
CHARACTERISTICS OF FAMILIES ON INDIAN RESERVES
C.D. 15 December 31, 1967

Area	No. of Persons	No. of Families	Persons per Family	No. of Children	No. of Illegitimate Children	Percent Illegitimacy	Population of Reserve	No. of Households	Persons per Household
Sawridge	39	6	6.5	20	5	25.0	29	5	5.8
Swan River	140	26	5.4	77	12	15.6	88	16	5.5
Driftpile	466	89	5.2	281	62	22.1	329	52	6.3
Sucker Creek	434	69	6.3	289	71	24.6	310	38	8.2
Grouard	44	8	5.5	28	5	17.9	3	1	3.0
Whitefish Lake	415	70	5.9	255	37	14.5	340	37	9.2
Wabasca	1,217	217	5.6	734	121	16.5	769	119	6.5
Sturgeon Lake	589	104	5.7	354	70	19.8	519	84	6.2
Horse Lake	103	15	6.9	64	32	50.0	77	17	4.5
Peace River Crossing	43	5	8.6	23	3	13.0	40	8	5.0
Lubicon Lake	52	9	5.8	29	13	44.8	0	0	-
Slaves of Upper Hay	942	164	5.7	536	61	11.4	920	172	5.3
Boyer River	250	36	6.9	154	18	11.7	208	26	8.0
Little Red River	788	138	5.7	494	42	8.5	597	104	5.7
Tallicree	185	34	5.4	38	20	52.6	82	9	9.1
TOTAL	5,707	990	5.8	3,376	572	16.9	4,311	688	6.3

In 1967, 1,476 children attended schools on all reserves in C.D. 15. The total school age population (6-20) for all reserves in the census division was 2,105, therefore, 62.0% of school age children among Indians in C.D. 15 attend school. For Alberta the percentage of school age children (6-20) who attended in 1967 school year was 82.7%. Assuming the Alberta attendance rate is desirable for Indian children in C.D. 15, 20.7% or 436 more children should be in school but are not. Table 13 gives school enrolment by band:

Table 13 SCHOOL ENROLMENT BY INDIAN BAND
C.D. 15 1968

Band	Enrolment
Slave	244
Little Red River	216
Boyer River	67
Tallcree	33
Grouard	8
Sawridge	6
Bigstone	372
Horse Lake	23
Whitefish Lake	72
Sucker Creek	106
Duncans	8
Lubicon Lake	8
Swan River	23
Driftpile	109
Sturgeon Lake	181
TOTAL	1,476

The attendance figures include all children, attending all manner of schools: provincial, residential, day and vocational schools. Information for a finer break-down is available: 74.3% of the children attended provincial schools, 17.9% attended residential schools, and the remaining 7.9% attended day or vocational schools.

Table 14 TYPES OF SCHOOL ATTENDED BY INDIAN CHILDREN
C.D. 15 1968

Band	Total School Enrolment	Day Schools	Res. Schools	Prov. Schools	Voc. Schools
Slave	244	64	161	19	-
Little Red River	216	-	-	215	1
Boyer River	67	-	-	66	1
Tallcree	33	-	-	33	-
Grouard	8	-	-	8	-
Sawridge	6	-	-	6	-
Wabasca	372	-	-	362	10
Horse Lake	23	-	-	23	-
Lubicon Lake	8	-	-	7	1
Whitefish Lake	72	-	4	57	11
Sucker Creek	106	-	21	80	5
Duncans	8	-	-	8	-
Swan River	23	-	1	19	3
Driftpile	109	-	3	104	2
Sturgeon Lake	181	13	74	89	5
TOTAL	1,476	77	264	1,096	39

Reserves in C.D. 15 have considerable land resources. The combined acreage is 307,864 acres, 83.9% of which are wooded or wild grass, 5.1% are tame pasture or cultivated and 11.0% are waste land. The details of land resources per band is in the following table:

Table 15 LAND (acres) BY INDIAN BAND C.D. 15 1968

Band	Wooded	Wild Grass	Tame Pasture	Cultivated	Other	Total
Slave	66,312	5,000	2,000	1,000	-	74,312
Little Red River	56,811	1,000	-	2,360	-	60,171
Boyer River	12,203	2,000	200	3,060	-	17,463
Tallcree	7,546	1,600	-	60	-	9,206
Grouard	611	200	-	260	-	1,071
Sawridge	3,321	500	-	-	1,511	5,332
Bigstone	41,222	2,000	20	50	8,393	51,685
Horse Lake	4,190	900	30	664	1,891	7,675
Whitefish Lake	10,709	100	-	10	1,174	11,993
Sucker Creek	9,077	3,800	42	995	1,011	14,925
Duncans	2,100	1,250	49	1,603	118	5,120
Lubicon Lake*	-	-	-	-	-	-
Swan River	2,100	2,500	-	580	5,793	10,973
Driftpile	4,000	5,700	30	1,790	4,273	15,793
Sturgeon Lake	11,000	500	250	725	9,670	22,145
TOTAL	231,202	27,050	2,621	13,157	33,834	307,864

* No reserve allotment.

Land use on the reserves in the census division could be classified as follows: leasing to off-reserve farmers and ranchers, farming and ranching by Indians on the reserves and production of wild hay. The following table indicates leases let by Indian bands:

Table 16 LEASES BY INDIAN BANDS IN C.D. 15 1968

Band	Grazing		Farming		Other	
	No.	Total Acreage	No.	Total Acreage	No.	Total Acreage
Slave	-	-	-	-	1	-
Little Red River	-	-	1	6,400	-	-
Boyer River	1	320	6	2,600	-	-
Grouard	-	-	1	260	-	-
Duncans	-	-	3	620	-	-
Swan River	-	-	-	-	3	31
Driftpile	-	-	2	1,200	-	-
TOTAL	1	320	8	11,400	4	31

Some Indians farm on reserves in C.D. 15. On 8 reserves there are 27 farmers, farming an average of 173 acres each. (See Table 17.)

Table 17 FARMING ON INDIAN RESERVES IN C.D. 15 1968

Band	No. of Farmers	Total Acreage	Average Acreage
Little Red River	-	500*	-
Boyer River	3	460	153
Tallcree	-	60*	-
Bigstone	2	70	35
Horse Lake	3	600	200
Sucker Creek	5	995	199
Duncans	4	640	160
Swan River	2	580	290
Driftpile	5	590	118
Sturgeon Lake	3	725	242
TOTAL	27	4,660 560*	173

* Band farms.

Ranching by Indians is more generalized than farming, there are 10 reserves in the census division on which ranching is carried on. Thirty two ranchers have an average of 15 head of cattle each.

Table 18 RANCHING ON INDIAN RESERVES IN C.D. 15 1968

Band	Number of Ranchers	Total Number of Cattle	Average Number of Cattle
Slave	5	50 80*	10
Little Red River	2	25	13
Boyer River	4	45	11
Tallcree	2	20	10
Bigstone	5	101	20
Horse Lake	2	35	18
Whitefish Lake	1	3	3
Sucker Creek	5	51	10
Swan River	1	48	48
Driftpile	5	105	21
TOTAL	32	483	15

* Band herd.

Lumbering operations were carried on in 1968 on two reserves in C.D.

15. Five operations produced a total of 1,300,000 fbm.

Table 19 LUMBERING ON INDIAN RESERVES IN C.D. 15 1968

Band	Number of Sawmills	Lumber (fbm.)
Slave	1	1,000,000
Little Red River	4	300,000
TOTAL	5	1,300,000

The agricultural potential of reserves in C.D. 15 is appreciable. According to the Alberta Soil Survey there are 182,965 acres of arable land, and another 124,590 acres of doubtful arable, pasture and woodland. The approximate acreage of arable land for each reserve in C.D. 15 is given in the table on the following page.

Table 20 AGRICULTURAL POTENTIAL OF RESERVES IN C.D. 15 ^{1/}
(acres)

Reserve	Potential Arable	Doubtful Arable	Pasture & Woodland	Topography
Hay Lakes	20,000	10,530	-	level
Zama Lake	1,500	4,201	-	level
Amber River	5,063	700	-	level
Upper Hay River	1,752	-	1,752	level
Bushe River	27,683	-	-	level
Bistcho Lake	-	-	875	level
Jackfish Pt.	-	-	256	level
Jean d'Or	34,358	-	-	level
Fox Lake	17,000	-	8,813	level
Boyer River	7,000	-	3,480	level
Childs Lake	6,283	-	700	level
Beaver Ranch	2,080	-	-	level
Tallcree Pr. 173	-	-	1,595	level
Tallcree Pr. 173A	5,531	-	-	level
Pakashan*	640	-	306	level
Sawridge	600	-	4,732	level
Bigstone 166	-	-	20,990	level
Bigstone 166A	-	-	1,563	level
Bigstone 166B	-	-	6,094	level
Bigstone 166C	-	-	8,655	level
Bigstone 166D	-	-	14,383	level
Horse Lake*	2,852	1,000	-	level
Clear Hills	3,823	-	-	level
Whitefish Lake	-	5,996	5,996	level
Peace River Crossing	4,100	-	1,020	level
Swan River	6,100	-	4,696	level
Sucker Creek*	8,000	-	6,925	level
Driftpile	8,300	-	7,493	rolling
Sturgeon Lake*	20,300	-	1,845	rolling
TOTAL	182,965	22,427	102,169	

* Taken from detailed soil survey.

^{1/} Alberta Research Council, Exploratory Soil Survey and Recon-
naissance Soil Survey.

Other sources of income among Indians in C.D. 15 are fishing and trapping. In 1968 there were 39 men earning \$24,000 by fishing, or an average of \$615 per fisherman annually. (See Table 21 .) A much larger number are engaged in trapping, but bring in a lower per capita income. In 1968, 588 men were engaged in trapping, earning an average of \$159 per trapper annually. (See Table 22 .)

Table 21 COMMERCIAL FISHING BY INDIAN BAND IN C.D. 15 1968

Band	Number of Fishermen	Total Annual Income	Average Annual Income
Bigstone	5	3,000	600
Whitefish Lake	30	19,000	633
Sturgeon Lake	4	2,000	500
TOTAL	39	\$24,000	\$615

Table 22 TRAPPING BY INDIANS IN C.D. 15 1967

Band	Number of Trappers	Total Annual Income	Average Annual Income
Slave	280	30,000	1,071
Little Red River	50	10,000	200
Boyer River	2	600	300*
Tallcree	20	2,500	125*
Bigstone	90	15,000	167
Horse Lake	4	1,500	375
Whitefish Lake	30	8,000	267
Sucker Creek	14	4,000	286
Duncans	2	500	250
Lubicon Lake	11	5,000	455
Swan River	12	2,000	167
Driftpile	24	4,000	167
Sturgeon Lake	49	11,000	224
TOTAL	588	\$93,500	\$159

* Data from 1967 records.

In addition to above incomes, Indian people receive financial assistance from the Indian Affairs Branch for food and clothing, whenever other

incomes become insufficient. In the census division, \$398,373 was paid to treaty Indians in welfare payments during 1967-68. On all the reserves in C.D. 15 there were 688 households in 1968. The average annual welfare payment per household was, therefore, \$579 for the census division.

Table 23 WELFARE PAYMENTS BY INDIAN BAND C.D. 15, 1967/68

Band	No. on Permanent Welfare	No. on Emergency Welfare	Total Welfare Costs
Slave	68	247	41,818
Little Red River	89	456	67,584
Boyer River	19	192	20,270
Tallcree	26	97	19,418
Grouard	-	-	-
Sawridge	-	-	-
Bigstone	1,476	4,798	118,635
Horse Lake	372	191	12,800
Whitefish Lake	960	995	36,456
Sucker Creek	418	1,128	21,464
Duncans	1	247	3,000
Lubicon Lake	-	-	-
Swan River	181	338	8,157
Driftpile	477	1,005	23,771
Sturgeon Lake	865	720	25,000
TOTAL	4,952	10,414	\$398,373

The total income from all sources during 1966-67, excluding wages for work off reserves, is given in Table 21. Since no information is available on off-reserve earnings, this item was omitted, although for some reserves it must be considerable. (See table on following page.)

Table 24

REVENUE OF INDIAN BANDS IN C.D. 15 1966-67

Band	Leases	Farming	Ranching	Timber	Oil & Gas	Trapping	Fishing	Wild Hay	Welfare	Total
Slave	200	-	2,500	59,000	43,776	13,000	-	-	48,000	166,476
Little Red River	100	-	3,000	3,750	20,500	10,000	-	-	72,000	109,350
Boyer River	760	-	-	-	8,500	600	-	-	24,000	33,860
Tallcree	-	-	2,000	808	6,522	2,500	-	-	19,000	30,830
Grouard	1,900	-	-	-	-	-	-	-	-	1,900
Sawridge	70	-	-	-	73,374	-	-	-	-	73,444
Bigstone	-	1,750	9,500	35,000*	25,000	24,000	2,500	-	85,176	182,926
Horse Lake	-	-	-	-	3,119	2,000	-	-	12,228	17,347
Whitefish Lake	-	-	200	-	15,000	10,000	20,000	300	35,100	80,600
Sucker Creek	-	24,875	6,000	-	14,699	4,800	1,000	-	19,440	70,814
Duncans	3,908	-	200	-	3,316	500	-	-	2,340	10,264
Lubicon Lake	-	-	-	-	-	5,500	-	-	-	5,500
Swan River	500	12,000	-	-	10,583	3,000	-	-	9,120	35,203
Driftpile	3,000	14,750	5,600	-	16,109	4,000	-	-	20,760	64,219
Sturgeon Lake	-	10,625	5,500	-	18,000	15,000	-	-	25,244	74,369
TOTAL	\$10,438	\$64,000	\$34,500	\$98,558	\$258,498	\$94,900	\$23,500	\$300	\$372,408	\$957,102

* Includes \$10,000 from firewood.

The fifteen Indian bands in C.D. 15 have a total of \$3,639,160 in trust with the Indian Affairs Branch, ranging from a low of \$1 for one band to a high of \$1,345,131 for another. The total band budget for 1968-69 is \$1,035,861.

Table 25 FINANCES OF INDIAN BANDS IN C.D. 12 1968

Band	Band Funds	Band Budget (1968-69)
Slave	1,345,131	573,300
Little Red River	290,770	26,995
Boyer River	78,883	7,100
Tallcree	22,516	9,750
Grouard	7	-
Sawridge	130,878	45,200
Bigstone*	343,002	43,350
Horse Lake	73,423	52,575
Whitefish Lake	127,793	32,870
Sucker Creek	131,810	32,765
Duncans	39,155	8,181
Lubicon Lake	1	-
Swan River	147,393	11,615
Driftpile	141,827	34,000
Sturgeon Lake	766,572	158,160
TOTAL	\$3,639,160	\$1,035,861

* Includes Jean Baptiste Gamble Reserve.

Statistics on housing on reserves in the census division are given in the following tables. (26, 27, 28.)

There are 688 homes on the reserves, which have been classified by Indian Affairs Branch agents into the following groups: good, fair, and poor. Of these, 58.6% are classed as good, 27.0% are fair and 14.4% are classed as poor.

The average size of Indian families in C.D. 15 is 6, the parents and 4 children. A family of 6 normally requires a house with at least 3 bedrooms, one for the parents and two for the four children. Counting living room, kitchen, and bathroom, a 3 bedroom house will have 6 rooms.

Table 26 HOUSING ON INDIAN RESERVES IN C.D. 15 1968

Band	Good		Fair		Poor		Total	
	No.	%	No.	%	No.	%	No.	%
Slave	105	61.0	43	25.0	24	14.0	172	100
Little Red River	25	24.0	54	52.0	25	24.0	104	100
Boyer River	14	53.8	6	23.1	6	23.1	26	100
Tallcree	5	55.6	3	33.3	1	11.1	9	100
Grouard	1	100.0	-	-	-	0.0	1	100
Sawridge	3	60.0	-	-	2	40.0	5	100
Bigstone	95	79.8	14	11.8	10	8.4	119	100
Horse Lake	17	100.0	-	0.0	-	0.0	17	100
Whitefish Lake	13	35.1	17	46.0	7	18.9	37	100
Sucker Creek	33	86.8	2	5.3	3	7.9	38	100
Duncans	6	75.0	1	12.5	1	12.5	8	100
Lubicon Lake	-	-	-	-	-	-	-	-
Swan River	11	68.8	2	12.5	3	18.7	16	100
Driftpile	31	59.6	9	17.3	12	23.1	52	100
Sturgeon Lake	44	52.4	35	41.7	5	5.9	84	100
TOTAL	403	58.6	186	27.0	99	14.4	688	100

Table 27 HOUSING ON INDIAN RESERVES IN C.D. 15, 1968

Band	1 rm.		2 rm.		3 rm.		4 rm.		5 rm.		6 rm.		7 +		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Slave	90	52.3	24	13.9	18	10.5	6	3.5	34	19.8	-	-	-	-	172	100
Little Red R.	79	76.0	12	11.5	13	12.5	-	-	-	-	-	0.4	-	-	104	100
Boyer River	6	2.1	-	-	7	26.9	13	50.0	-	-	-	-	-	-	26	100
Tallcree	1	11.1	1	11.1	1	11.1	1	11.1	5	55.6	-	-	-	-	9	100
Grouard	-	-	-	-	1	100.0	-	-	-	-	-	-	-	-	1	100
Sawridge	1	20.0	1	20.0	-	-	-	-	1	20.0	2	40.0	-	-	5	100
Bigstone	9	7.5	24	20.2	51	42.9	10	8.4	25	21.0	-	-	-	-	119	100
Horse Lake	-	-	-	-	6	30.3	4	23.5	7	41.2	-	-	-	-	17	100
Whitefish Lake	5	13.5	8	21.6	4	10.8	12	32.5	8	21.6	-	-	-	-	37	100
Sucker Creek	1	2.6	2	5.3	8	21.0	5	13.2	14	36.8	5	13.2	3	7.9	38	100
Duncans	-	-	-	-	2	25.0	1	12.5	5	62.5	-	-	-	-	8	100
Lubicon Lake	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Swan River	-	-	-	-	2	12.5	2	12.5	5	31.2	7	43.8	-	-	16	100
Driftpile	4	7.7	2	3.8	20	38.5	5	9.6	12	23.1	5	9.6	4	7.7	52	100
Sturgeon Lake	6	7.1	19	22.6	27	32.2	14	16.7	12	14.3	6	7.1	-	-	84	100
TOTAL	202	29.4	93	13.5	160	23.3	73	10.6	128	18.6	25	3.6	7	1.0	688	100

Table 28 SERVICES IN INDIAN HOMES C.D. 15, 1968

Band	Electricity		Sewer, Septic Tank		Indoor Bathroom		Telephone		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%
Slave	30	17.4	-	-	-	-	-	-	172	100
Little Red River	22	21.2	-	-	-	-	-	-	104	100
Boyer River	6	23.1	-	-	-	-	-	-	26	100
Tallcree	-	-	-	-	-	-	-	-	9	100
Grouard	-	-	-	-	-	-	-	-	1	100
Sawridge	4	80.0	4	80.0	4	80.0	-	-	5	100
Bigstone	67	56.3	-	-	-	-	-	-	119	100
Horse Lake	17	100.0	9	52.9	9	52.9	5	29.4	17	100
Whitefish Lake	30	81.1	-	-	-	-	0	0.0	37	100
Sucker Creek	38	100.0	-	-	-	-	0	0.0	38	100
Duncans	8	100.0	-	-	-	-	3	37.5	8	100
Lubicon Lake	-	-	-	-	-	-	-	-	-	-
Swan River	16	100.0	1	6.2	11	68.8	3	18.8	16	100
Driftpile	45	86.5	-	-	-	-	-	-	52	100
Sturgeon Lake	84	100.0	5	5.9	5	5.9	-	2.7	84	100
TOTAL	367	53.3	19	2.8	29	4.2	11	1.6	688	100

In C.D. 15, however, only 4.6%, or 32 out of 688 Indian homes have 6 rooms or more. Consequently 656 homes are under sized, requiring enlargement or rebuilding. If all the homes classed as poor are rebuilt, 99 homes will be rebuilt and 557 homes will require enlarging.

About half (53.3%) of Indian homes in the C.D. have electricity; only 4.2%, however, have an indoor bathroom, 2.8% have sewage facilities and 1.6% have a telephone.

Problems and Suggested Adjustments

1. The basic problem on reserves in C.D. 15 is that the resources of the reserves are inadequate for the present population and grossly inadequate for the population of ten years from now. The principal resource of the reserves is agricultural land, although a few people could be employed in fishing, trapping, forestry, or recreation. The agricultural resource is sufficient for establishing approximately 319 economic units, however, there are presently 775 families on Indian reserves in C.D. 15 and in 1980 there will be 1,182 families.

Table 29 NUMBER OF FAMILIES COMPARED WITH NUMBER OF
POTENTIAL AGRICULTURAL UNITS FOR RESERVES C.D. 15 ^{1/}
1967

Reserve	Total Number of Families	Number of Potential Agricultural Units
Hay Lakes	87	35
Zama Lake	-	4
Amber River	-	8
Upper Hay River	34	3
Bushe River	4	46
Bistcho Lake	8	-
Jackfish Pt.	8	-
Jean d'Or)	-	-
Fox Lake)	110	86
Boyer River)	-	-
Childs Lake)	36	22
Beaver Ranch)	-	-
Tallcree Pr. 173)-	26	12
Tallcree Pr. 173A)	-	-
Pakashan	-	1
Sawridge	6	2
Bigstone 166	-	2
Bigstone 166A	70	-
Bigstone 166B	44	1
Bigstone 166C	10	1
Bigstone 166D	33	2
Horse Lake)	-	-
Clear Hills)	14	11
Whitefish Lake	56	2
Peace River Cross.	6	7
Swan River	19	11
Sucker Creek	59	14
Driftpile	64	15
Sturgeon Lake	81	34
TOTAL	775	319

^{1/} Estimates made by author.

2. Only 7% of arable land on reserves is cultivated, and there are only 483 cattle on 73,511 acres of grazing land. The following are estimates for potential agricultural development and approximate costs involved:

Table 30 POTENTIAL AGRICULTURAL DEVELOPMENT ON
INDIAN RESERVES C.D. 15 ^{1/}

Reserve	Potential Grain Land	Cost of Development	Potential Pasture	Potential Hay Land	Cost of Development
Hay Lakes	20,000	\$ 800,000	9,250	1,280	\$ 60,450
Zama Lake	1,500	60,000	3,561	640	29,161
Amber River	5,063	202,520	-	-	-
Upper Hay River	1,752	70,080	-	-	-
Bushe River	27,683	1,107,320	-	-	-
Jean d'Or	34,358	1,374,320	-	-	-
Fox Lake	17,000	680,000	3,566	640	29,166
Boyer River	7,000	280,000	-	-	-
Childs Lake	6,283	251,300	-	-	-
Beaver Ranch	2,080	83,200	-	-	-
Tallcree Pr. 173A	5,531	221,240	-	-	-
Pakashan	640	25,600	-	-	-
Sawridge	600	24,000	-	-	-
Bigstone 166	-	-	9,215	1,280	60,415
Bigstone 166C	-	-	3,687	640	29,287
Bigstone 166D	-	-	6,551	640	32,151
Horse Lake	2,852	114,080	-	-	-
Clear Hills	3,823	152,920	-	-	-
Whitefish Lake	-	-	7,714	1,280	58,914
Peace R. Crossing	4,100	164,000	-	-	-
Swan River	6,100	244,000	-	-	-
Sucker Creek	8,000	320,000	-	-	-
Driftpile	8,300	322,000	-	-	-
Sturgeon Lake	20,300	812,000	-	-	-
TOTAL	182,965	\$7,308,600	43,544	6,400	\$299,544

The above estimates are based on \$40 per acre for clearing and breaking and \$1 per acre for fencing.

The total cost of land improvement on all Indian Reserves in C.D. 15 would be \$7,608,144.

^{1/} Estimates by author.

3. Welfare payments to residents of Indian Reserves in the census division are high. During 1968 the average welfare payment per family was \$579.
4. Treaty Indian people in C.D. 15 tend to have larger families (5.8 persons) than Albertans generally (3.9 persons). It is suggested that these people may desire information on family planning methods.
5. Illegitimacy rates are high among Indians in C.D. 15. In 1967, 16.9% of children under 21 years of age were illegitimate, whereas in Alberta 6.9% of children under 11 years of age are illegitimate.
6. Housing on reserves is inadequate. A total of 99 homes require rebuilding, and another 557 require enlargement. Only 4.2% of homes on reserves have an indoor bathroom; 2.8% have sewage facilities and 1.6% have a telephone. If the cost of building a house is \$10,000 and the cost of enlargement is \$5,000, the improvement of housing on reserves in C.D. 15 will cost approximately \$3,775,000.
7. The average age at death among Indians in C.D. 15 is very low. In 1967 in the Lesser Slave Lake area the average age at death was 43 years. For Canada generally it was 63 years (1966).
8. Educational levels of adults are very low. In 1961, 33.3% of Indian adults in C.D. 15 had no education and only 0.8% had grade 10 or better.
9. The school dropout rate is high on Indian reserves. In 1965, 6.3% of Indian students in C.D. 15 left school before grade 10. In all of Alberta schools 0.66% left before grade 10.
10. Crime rates are high among Indian people. Of the total admission to Alberta correctional institutions during August 1966, 29% were of Indian ancestry, while only about 3.4% of the total population of Alberta are of Indian ancestry. The crimes were predominantly liquor infractions or crimes involving liquor.

METIS COLONIES IN C.D. 15

Four of Alberta's eight Metis Colonies are located in C.D. 15. Paddle Prairie Colony is located 120 miles north of Peace River; Big Prairie and Gift Lake Colonies are 35 miles north-east of High Prairie; and East Prairie Colony is 15 miles south of Enilda.

The populations of the four colonies are given in the following table:

Table 31 POPULATION OF METIS COLONIES IN C.D. 15
November 30, 1968

Colony	Population
Paddle Prairie	355
Big Prairie	206
Gift Lake	366
East Prairie	158
TOTAL	1,085

The Gift Lake Colony has the greatest population (366); Paddle Prairie is second largest (355); Big Prairie (206) and East Prairie (158) respectively, third and smallest. The total population of Metis Colonies in C.D. 15 is 1,085 or 43% of the total in Alberta.

The distribution of the population of the colonies according to age group is as follows:

Table 32 POPULATION BY AGE GROUPS METIS COLONIES
C.D. 15, November 30, 1968

Colony	Pre-school		School Age		Adult		Total	
	No.	%	No.	%	No.	%	No.	%
Paddle Prairie	66	18.6	149	42.0	140	39.4	355	100
Big Prairie	51	24.8	85	41.2	70	34.0	206	100
Gift Lake	129	33.2	114	31.2	123	33.6	366	100
East Prairie	43	25.1	56	35.8	59	39.1	158	100
TOTAL	289	26.6	404	37.3	392	36.1	1,085	100

A comparison may be made with the distribution by age group of the population of Alberta.

Table 33 POPULATION BY AGE GROUPS AND METIS COLONIES
Alberta (1966) and C.D. 15 (1968) ^{1/}

	Pre-school		School Age		Adult		Total	
	No.	%	No.	%	No.	%	No.	%
Alberta	173,568	12	466,197	32	823,438	56	1,463,203	100
Metis Colonies								
C.D. 15	289	27	404	37	392	36	1,085	100

The Metis Colonies have a higher proportion of preschool children, and a lower proportion of adults. The distribution probably indicates a higher birth rate on the colonies, and an out migration of young adults. The lower proportion of adults may also indicate a higher mortality rate.

The population of colonies in C.D. 15 has grown from 789 in 1959 to 1,085 in 1968, an increase of 296 in nine years, or by 27%. The average annual increase is 33 persons or 3.0%.

Table 34 POPULATIONS OF COLONIES IN C.D. 15
1959 - 1968

Colony	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968
Paddle Pr.	239	321	271	297	318	360	358	367	361	355
Big Prairie	204	250	284	276	294	290	272	251	242	206
Gift Lake	200	281	319	307	319	316	317	426	404	366
East Prairie	146	178	143	147	153	145	156	202	179	158
TOTAL	789	1,030	1,017	1,027	1,084	1,111	1,103	1,246	1,186	1,085

It is evident that the population of all colonies has increased since 1959. All colonies, however, have shown decreases in some years. The

^{1/} D.B.S.

populations of three colonies have shown a decrease from 1966 to 1968: Big Prairie, Gift Lake and East Prairie. Although Big Prairie has shown a small increase over the eight year period, it has declined in population regularly since 1964.

On the basis of past trends, population projections to 1979 are given in the following table:

Table 35 POPULATIONS OF METIS COLONIES IN C.D. 15
1959 - 1967 and 1971 - 1979 (Projected)

Colony	1959	1963	1967	1971	1975	1979
Paddle Prairie	239	318	361	413	463	514
Big Prairie	204	294	242	226	201	178
Gift Lake	200	319	404	498	590	682
East Prairie	146	153	179	200	222	244
TOTAL	789	1,084	1,186	1,337	1,476	1,618

If the population of the Metis colonies continue to grow as they have since 1959, by 1979 there will be 682 people on the Gift Lake Colony, 514 on Paddle Prairie, 244 on East Prairie and 178 on the Big Prairie Colony. The projected populations show an increase for all colonies except the Big Prairie Colony, which declines from 242 in 1967 to 178 in 1979.

Projections were made by a method which uses an average of the long term trend and the short term trend. ^{1/} For example:

Let P_1 = population in 1959,
 P_2 = population in 1963,
 P_3 = population in 1967,
and P_4 = population in 1971.

Let X be the long term (4 year) average increase = $\frac{P_3 - P_1}{2}$
and Y be the short term (4 yr.) average increase = $P_3 - P_2$

^{1/} Provincial Planning Branch; Population 1 - Trends, Department of Municipal Affairs, Edmonton. 1967, p. 1.

$$\begin{aligned}\text{Then } P_4 &= P_3 + \frac{X + Y}{2} \\ &= P_3 + \frac{P_3 - P_1}{4} + \frac{P_3 - P_2}{2} \\ &= \frac{7P_3 - P_1 - 2P_2}{4}\end{aligned}$$

The populations of the four colonies for 1968, which have become available since these projections were made, are lower than the projected values. This indicates that the trend from 1959 - 1967 may be changing. Over the last two years people appear to be leaving the colonies faster than the populations increase. (See graphs on following page.)

Educational facilities are available locally on the Paddle Prairie, Big Prairie and Gift Lake Colonies. Children on the Paddle Prairie Colony attend school at Paddle Prairie for grades 1 - 8, and are transported by bus to Keg River Cabins school for grades 9 and 10. In order to attend high school they must go to Manning, Peace River, Grouard, or Edmonton. On the Big Prairie colony, children attend the local school to grade 8, and attend higher grades elsewhere. The school on Gift Lake Colony also offers grades 1 - 8, and students live off the colony for higher grades.

No educational facilities are available on the East Prairie Colony. Students are bussed to school in High Prairie, and some attend high school in other centers.

Figure 2 COLONY POPULATION - C.D. 15
1959 through 1968

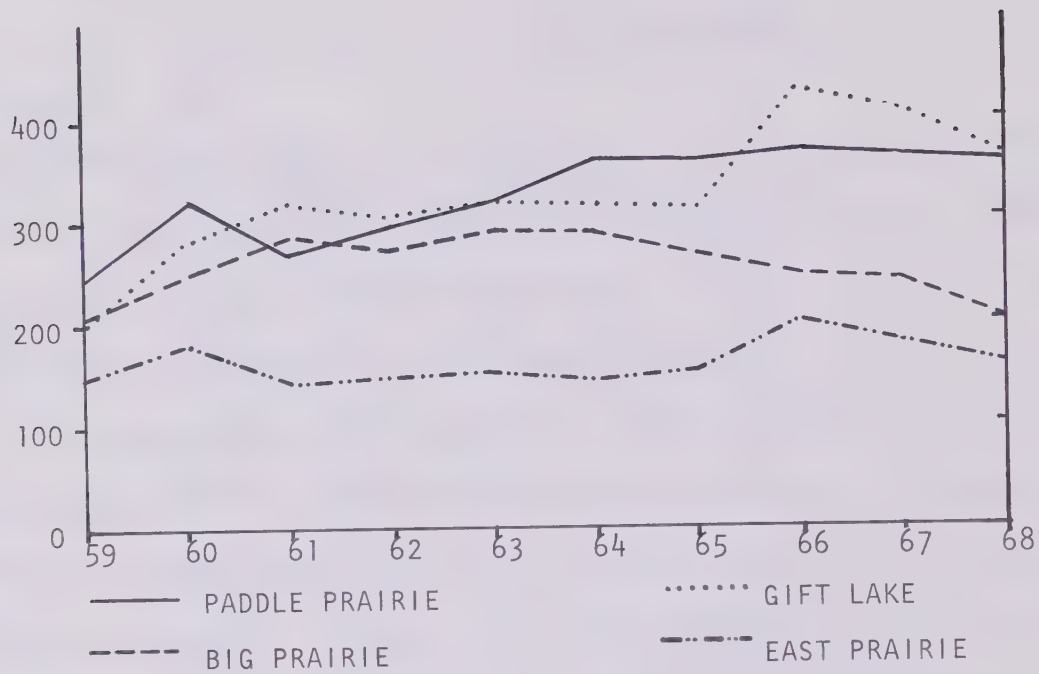
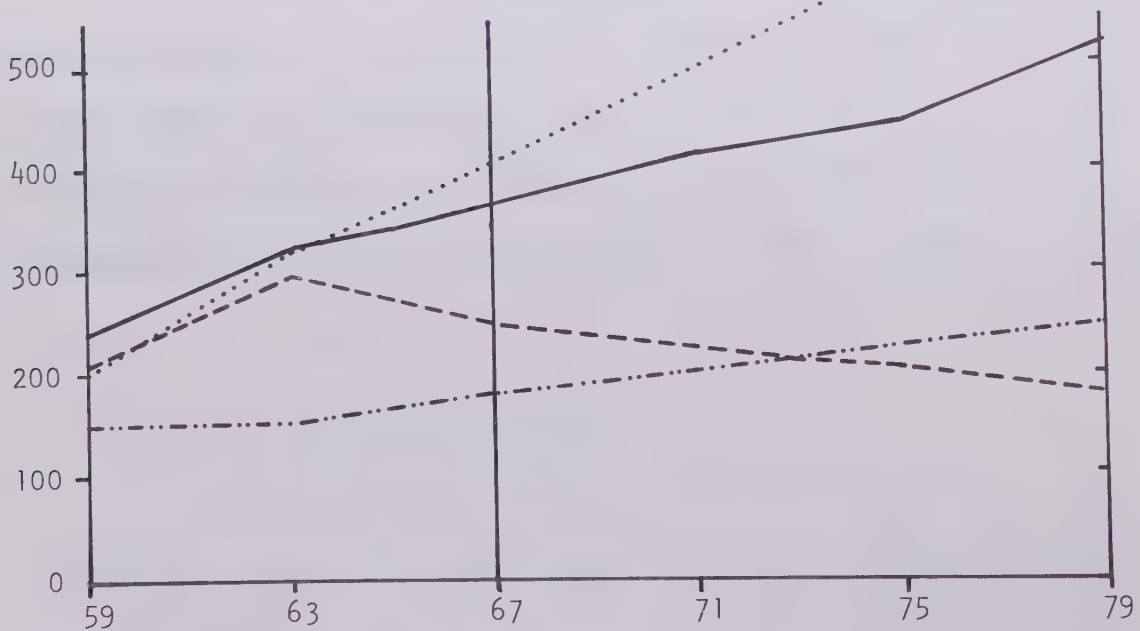


Figure 3 COLONY POPULATION - C.D. 15
1959-67 with projections to 1979



The following table gives school attendance from the Metis colonies in C.D. 15

Table 36 SCHOOL ATTENDANCE FROM METIS COLONIES IN C.D. 15 - 1968

Colony	Local School (s)	Higher grades off Colony	Total
Paddle Prairie	125	24	149
Big Prairie	81	4	85
Gift Lake	104	10	114
East Prairie	51	6*	57
TOTAL	361	44	405

* Includes one University student in 3rd year education.

The residents of Metis colonies receive financial assistance from the Metis Rehabilitation Branch in the following forms: wages for work projects, assistance for food and clothing, medical and dental care, housing materials, and accomodation for students living off the colony. The total of these expenditures for the four colonies in C.D. 15 is given in the following table:

Table 37 MAJOR FINANCIAL ASSISTANCE TO METIS COLONIES
in C.D. 15, 1963 - 1967

Colony	1963-64	1964-65	1965-66	1966-67
Paddle Prairie	\$31,527	\$32,257	\$45,054	\$53,321
Big Prairie	19,959	21,969	20,501	25,344
Gift Lake	18,901	21,892	19,869	29,231
East Prairie	13,413	16,959	20,659	22,530
TOTAL	\$83,800	\$93,077	\$106,083	\$130,426

The details of these payments for each colony are given in Tables 38, 39, and 40.

Table 38 MAJOR FINANCIAL ASSISTANCE TO PADDLE PRAIRIE METIS COLONY
1963 - 1967

Year	Wages	Food & Clothing	Medical & Dental	Housing Materials	Student Accomodation	Totals
1963-64	\$19,025	\$3,980	\$ 558	\$4,432	\$3,533	\$31,527
1964-65	12,291	7,980	2,289	4,148	5,549	32,257
1965-66	25,910	6,750	2,024	4,888	5,481	45,054
1966-67	24,903	12,548	1,590	9,352	4,928	53,321

Table 39 MAJOR FINANCIAL ASSISTANCE TO BIG PRAIRIE METIS COLONY
1963 - 1967

Year	Wages	Food & Clothing	Medical & Dental	Housing Materials	Student Accomodation	Totals
1963-64	\$6,529	\$6,538	\$5,358	\$ 630	\$ 904	\$19,959
1964-65	6,993	6,958	4,578	976	2,464	21,969
1965-66	6,276	8,154	3,636	1,301	1,135	20,501
1966-67	7,499	10,526	2,870	3,595	852	25,344

Table 40 MAJOR FINANCIAL ASSISTANCE TO GIFT LAKE METIS COLONY
1963 - 1967

Year	Wages	Food & Clothing	Medical & Dental	Housing Materials	Student Accomodation	Totals
1963-64	\$8,820	\$7,331	\$1,836	\$ 630	\$ 284	\$18,901
1964-65	7,786	5,606	3,320	5,180	--	21,892
1965-66	6,108	6,750	2,958	3,062	990	19,869
1966-67	12,004	8,066	2,622	3,973	2,565	29,231

Table 41 MAJOR FINANCIAL ASSISTANCE TO EAST PRAIRIE METIS COLONY
1963 - 1967

Year	Wages	Food & Clothing	Medical & Dental	Housing Materials	Student Accomodation	Totals
1963-64	\$4,667	\$4,008	\$2,669	\$ 704	\$1,365	\$13,413
1964-65	4,598	5,738	3,296	1,199	2,128	16,959
1965-66	6,736	7,005	3,419	617	2,882	20,659
1966-67	6,987	7,722	2,147	3,295	2,378	22,530

For the four colonies in C.D. 15 social assistance payments, which include food, clothing, medical care, and dental care, have increased from \$32,000 in 1964 to \$43,000 in 1968. The payments, however, reached a peak in 1967 (\$48,000) and have decreased by \$5,000 in 1968. The per capita social assistance payments have also decreased slightly from \$40.5 in 1967 to \$39.7 in 1968. Social assistance payments for each colony in C.D. 15 from 1964 to 1968 are given in the following table:

Table 42 SOCIAL ASSISTANCE (Food, Clothing, Medical, Dental)
FOR METIS COLONIES IN C.D. 15
1964 - 1968

Colony	1964	1965	1966	1967	1968
Paddle Prairie	4,538	10,269	8,774	14,138	18,615
Big Prairie	11,896	11,536	11,790	13,396	6,597
Gift Lake	9,167	8,926	9,708	10,688	9,400
East Prairie	6,677	9,034	10,424	9,869	8,472
TOTAL	\$32,278	\$39,765	\$40,696	\$48,091	\$43,084

The average annual income per family on the four colonies is estimated at \$3,275. Assuming that \$4,000 is a minimum income for a family of seven, the families on the Metis colonies in C.D. 15, on the average, are below

the poverty line, however, data are not available to determine how many families are below the poverty line. The families of the Gift Lake Colony and the East Prairie Colony have lower incomes than those of the Paddle Prairie and Big Prairie Colonies. The average family income for each is given in the following table:

Table 43 ANNUAL FAMILY INCOMES ON METIS COLONIES
C.D. 15, 1968

Colony	Total Income	No. of Families*	Average Annual Income Per Family
Paddle Prairie	232,213	57	4,074
Big Prairie	129,106	32	4,034
Gift Lake	120,948	58	2,085
East Prairie	77,765	24	3,240
TOTAL	560,032	171	3,275

* Excludes families whose head is not in the productive age groups.

Electric power is available to three of the colonies: Paddle Prairie, Big Prairie, and Gift Lake. On Paddle Prairie, approximately nine homes are connected; Big Prairie three homes, and Gift Lake five homes. The East Prairie Colony is nineteen miles from the nearest power line, and the homes are widely dispersed on the colony. There are plans to extend the power line to East Prairie Colony in the summer of 1969.

Communications are by two-way radio or mobile phone. On Paddle Prairie colony, there is a mobile phone in the store. On Big Prairie and East Prairie, a two-way radio operates during the season of possible forest fires. The people on Gift Lake colony have a mobile phone in their store.

Lumbering was carried on, on the four colonies in 1966-67. Logging and sawing operations were under way on the Paddle Prairie and Gift Lake Colonies, and logging only on the Big Prairie and East Prairie Colonies. In addition, fence posts were cut on the Paddle Prairie Colony and pulpwood and tie logs were cut on the Big Prairie and East Prairie Colonies. The production and income are given in Table 44.

Table 44 LUMBERING ON METIS COLONIES IN C.D. 15
1966 - 1967

Colony	Lumber Production	Income From Lumber	Timber Dues
Paddle Prairie	1,727,498 fbm 11,642 posts	\$34,559 10,478	\$ 8,724 848
Big Prairie	1,040,541 fbm 1,755 cords 55,000 tie logs	45,662	12,589
Gift Lake	1,300,000 fbm	26,000	6,500
East Prairie	3,073,543 fbm 133 cords 5,500 tie logs	29,389	16,391
TOTAL	7,931,282 fbm 11,642 posts 1,888 cords 60,500 tie logs	\$146,088	\$45,052

In 1968 there was no logging or sawing on the Paddle Prairie Colony; however, some ties and 8,000 posts were cut. Logging on Big Prairie has increased to 5,209,383 fbm, but no pulpwood or ties were cut. On the Gift Lake Colony, logging was increased to 1,797,215 fbm and another 900,000 fbm was logged and sawed. Some pulpwood and tie logs were also cut on Gift Lake Colony in 1968. The East Prairie Colony showed an increase in logging for 1968 to 2,831,607 fbm; some pulpwood was cut but no tie logs.

Agriculture is practised on the four Metis Colonies. A total of 3,685 acres were cropped in the 1967-68 season, producing wheat, barley, oats and rape. The grain production for the four colonies is given in the following table:

Table 45 GRAIN PRODUCTION (Bushels) ON METIS COLONIES
 IN C.D. 15, 1967-68

Colony	Acreage Cropped	Wheat	Oats	Barley	Other
Paddle Prairie	2,374	1,000	9,890	7,800	1,729 (rape)
Big Prairie	740	1,400	7,600	3,760	--
Gift Lake	112	0	0	0	--
East Prairie	459	0	1,758	1,323	--
TOTAL	3,685	2,400	19,248	12,883	1,729 (rape)

In 1966-67, 7,439 acres were farmed on the four colonies by 18 farmers. The average farm size was only 92 acres.

Table 46 FARMING ON METIS COLONIES C.D. 15, 1967

Colony	Acres Farmed	No. of Farmers	Av. No. of Acres Farmed
Paddle Prairie	5,237*	35	150
Big Prairie	1,227	18	68
Gift Lake	204	3	68
East Prairie	771	25	31
TOTAL	7,439	81	92

* Government farm not included.

The following is a livestock inventory for the four colonies:
cattle - 348, pigs - 154, fowl - 173, horses - 282. A more detailed inventory is presented in Table 47.

Table 47 LIVESTOCK ON METIS COLONIES IN C.D. 15, 1968

Colony	Horses	Cattle	Pigs	Fowl
Paddle Prairie	120	180	115	114
Big Prairie	65	57	12	0
Gift Lake	46	55	0	0
East Prairie	51	56	27	59
TOTAL	282	348	154	173

In 1966-67 there were 24 ranchers on the four colonies, with 366 cattle. The average herd consisted, therefore, of 15 head. The details of ranching on these colonies are given in Table 48.

Table 48 RANCHING ON METIS COLONIES C.D. 15, 1967

Colony	No. of Cattle	No. of Ranchers	Av. No. of Cattle
Paddle Prairie	124	11	13
Big Prairie	35	3	12
Gift Lake	141	3	47
East Prairie	66	7	9
TOTAL	366	24	15

The agricultural potential of the four Metis Colonies is underdeveloped. Out of 85,820 acres of potential grain land, only 7,655 acres are broken. An additional 817,700 acres of hay, pasture and woodland, with a potential for forage production and grazing is undeveloped. (See Table .)

The agricultural resources on the four colonies are considerable. Big Prairie, East Prairie and Paddle Prairie Colonies together have 86,000 acres of A.R.D.A. #3 land which would be adequate for growing grain, especially early maturing feed grain. Most of the land (431,000 acres) on these three colonies, however, is in the ARDA #4 classification,

which is suitable for hay production and pasture. The following table gives the detail of soil capability for the above colonies.

Table 49 SOIL CAPABILITY FOR THREE METIS COLONIES IN C.D. 15 ^{1/}

Colony	Total	3	4	5	6	7	0
Big Pr.	198,880	10,880	104,640	32,800	2,880	9,600	38,080
E. Prairie	80,640	30,400	15,680	14,080	3,520	3,520	13,440
Paddle Pr.	416,640	44,540	310,600	13,600	9,300	7,500	31,100
TOTAL	696,160	85,820	430,920	60,480	15,700	20,620	82,620

Canada Land Inventory has not yet completed a soil capability study for the Gift Lake Colony. However, some data on soil is available for the colony from the Preliminary Soil Survey of the Research Council of Alberta. The details of the soil capability are given in the following table:

Table 50 SOIL CAPABILITY OF THE GIFT LAKE METIS COLONY ^{2/}

Total	207,360 acres
Potential Arable	69,120 acres
Doubtful Arable	92,160 acres
Pasture-Woodland	46,080 acres

It is estimated that the potential arable could be used for hay production, and the doubtful arable and most of the pasture-woodland could be used for pasture.

Assuming that a minimum farm or ranch income is \$4,000 per year, from the above estimates the four colonies could support 143 farmers and

^{1/} Canada Land Inventory, tabulated by author.

^{2/} Preliminary Soil Survey, Research Council of Alberta, tabulated by author.

176 ranchers, or a total of 319 agricultural units. The details of these estimates are given in Table 51.

Table 51 AGRICULTURAL POTENTIAL OF METIS COLONIES IN C.D. 15 ^{1/}

Colony	Grain Land (acres)	Potential Units	Pasture (acres)	Potential Units	Tot. Pot. Units
Paddle Prairie	44,540	74	372,100	80	154
Big Prairie	10,880	18	188,000	40	58
Gift Lake	0	0	207,360	45	45
East Prairie	30,400	51	50,240	11	62
TOTAL	85,820	143	817,700	176	319

The above estimates are based on a net return to labour and management of \$7.04 per acre ^{2/} for grain farming in the Peace River area and a net return to labour and management of \$25.37 per animal unit ^{3/} for ranching in the same area. For a minimum annual income of \$4,000, 600 acres of land will be required per farm unit and 160 animal units per ranch. Each ranch unit will require 4,000 acres of pasture and 640 acres of hay land.

The following table makes a comparison of the number of families now and the projected number of families on the four colonies, with the number of potential agricultural units.

^{1/} Estimates made by author.

^{2/} Bauer, L.; 1966 Alberta Farm Business Report, Farm Management Branch, Economics Division, Alberta Department of Agriculture, 1966, p.49.

^{3/} Hackett, B.A.; 1966 Alberta Cow-Calf Enterprise Analysis, Farm Management Branch, Economics Division, Alberta Department of Agriculture, 1966, p. 36.

Table 52 FAMILIES (Present & Projected to 1979) and POTENTIAL AGRICULTURAL UNITS METIS COLONIES IN C.D. 15, 1968 ^{1/}

Colony	Present No. of Families	Projected No. of Families (1979)	Potential Agri. Units
Paddle Prairie	59	73	154
Big Prairie	34	25	58
Gift Lake	61	97	45
East Prairie	26	35	62
TOTAL	180	230	319

There is room for expansion of agriculture on all colonies in the census division except Gift Lake, which already has more people than the agricultural resources can support. On the four colonies, the agricultural resources could support 139 families in addition to those already there.

Problems

1. Low education levels among adults on the colonies. (See introduction.)
2. School dropout rates among children from the colonies are above average. (See introduction.)
3. Relatively high financial assistance to colony members.
4. Inadequate communication facilities.
5. Incomplete electrification on three colonies and no electric power on one.
6. Underdeveloped agricultural potential.

Recommendations

The major resource on the Metis colonies in C.D. 15 is the agricultural potential, which would be able to support approximately 319 families,

^{1/} Estimates of Rural Development Branch, Economics Division, Alta. Dept. of Agriculture.

or 1.8 times the present population and 1.4 times the population projected to 1979. The major problem of the colonies, however, is a lag in social integration, which is indicated by low education levels, high assistance payments, and poor communication facilities.

It is, therefore, recommended that an educational program be implemented at the same time and in coordination with an agricultural development program.

The purpose of the education program would be to improve integration of colony members into Alberta society, by giving them an understanding and experience of the basic prerequisites of independence and success in this society. It may include:

- the basic academic skills
- homemaking
- personal and family financing and budgeting
- leadership training
- planning development and growth
- implementation of plans over several years
- financing business operations
- logging and sawmill operations
- heavy equipment operating
- modern methods of farming
- vocational training in other fields.

A simultaneous agricultural development may include:

- cutting, sawing and planing existing timber stands
- clearing and breaking farm hay land
- fencing and improving pasture.

Estimated Cost of Development 1968 - 1978

1. Total educational program

From the four colonies, 392 adults may become involved in the program. Personnel requirements for the program may be:

- basic academic skills:	6 at \$ 8,000/year	\$480,000
- homemaking and budgeting:	6 at \$ 8,000/year	\$480,000
- social development processes:	1 at \$ 8,000/year	\$ 80,000
- financial advisor:	1 at \$ 8,000/year	\$ 80,000
- agricultural advisor:	1 at \$ 8,000/year	\$ 80,000
- travel and subsistence allowance for 15 educators at \$1,500 each per year:		<u>\$225,000</u>
TOTAL COST		\$2,065,000

2. Vocational training

One third of the male adult population or 65 people may require vocational training and relocation assistance. Allowing \$70 per week for 50 weeks and \$600 per year for tuition, books and materials, the cost of retraining would be: \$266,500.

A relocation allowance of \$1,000 per family may be required:

\$ 65,000

The total cost of retraining and relocation would be:

\$331,500

3. Timber production

The training value of the Metis' developing their own timber resources should be carefully considered. If an economically feasible means of

production can be found including some or all of the phases, logging, sawing, and planing, then it may be implemented, if only for the experience and training it would provide.

It is suggested that the economics of the following be studied:
a planing mill on the Paddle Prairie Colony; centralized sawing and planing mills for the Big Prairie, Gift Lake, and East Prairie Colonies.

4. Land development

Land development costs are summarized in the following table:

Table 53 COST OF LAND DEVELOPMENT FOR METIS COLONIES IN C.D. 15 ^{1/}

Colony	Grain Land (acres)	Cost ($\$$)	Hay Land (acres)	Cost ($\$$)	Pasture (acres)	Cost of Farming ($\$$)	Total Cost ($\$$)
Paddle Pr.	44,540	1,781,600	51,200	2,048,000	320,900	320,900	4,150,500
Big Prairie	10,880	435,200	25,600	1,024,000	162,400	162,400	1,621,600
Gift Lake	0	0	28,800	1,152,000	178,560	178,560	1,330,560
East Pr.	30,400	1,216,000	7,040	281,600	43,200	43,200	1,540,800
TOTAL	85,820	3,432,800	112,640	4,505,600	705,060	705,060	8,643,460

The above estimates are made on an assumption of \$40 per acre for development of grain and hay land, and one dollar per acre for fencing pasture. The estimated total cost of land development on the four colonies is: \$ 8,643,460

Total estimated cost for the ten year period: \$11,039,960

~~MAY 8 '79~~



EDMONTON, ALBERTA

CENSUS DIVISION 15 (Detailed)

